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Prehistoric & Roman

WALES

BY

R. E. M. WHEELER, D.Lit., F.S.A.

Director of the National Museum of Wales

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PREFACE

THE present volume is based upon a series of introductory public lectures given at the University College of South Wales and Monmouthshire, Cardiff, in 1922. The institution of a Department of Archaeology at this college ; the development of certain aspects of archaeology and anthropology by Professor H. J. Fleure in connexion with the teaching of geography in the University College of Wales, Aberystwyth ; the attention given to the prehistoric and Roman periods of Wales by Professor J. E. Lloyd in the chair of history at the University College of North Wales, Bangor ; the practical assistance extended to archaeological field-work by the recently constituted Board of Celtic Studies of the University of Wales ;[1] the completion of more than half its allotted task by the Royal Commission on Ancient Monuments (Wales) ; and, generally, the flourishing condition of several archaeological societies in the Principality —have led to a demand for a comprehensive survey of ancient Wales in relation to the prehistory and early history of the adjacent lands. Towards this end, I offer a small scrap-book with the hope that it may soon be superseded by a work more commensurate with the material. The hills of Wales teem with the vestiges of early man ; much of the evidence is unmapped, and of most of it we shall know nothing substantial without systematic excavation carried out, as it often must be, in remote and storm-ridden uplands

[1] I am indebted to the Board for a grant from the Tom Ellis Fund towards the illustration of this book.

with little expectation of more than the most meagre reward. A few sturdy pioneers, such as Judge Wynne Ffoulkes, took the first steps in the middle of the last century, but the names of their more recent successors in this rough-and-tumble work are only too few. Among them it is not invidious to mention the late Mr. S. Baring Gould, Mr. Willoughby Gardner, Mr. H. Harold Hughes, and Mr. Howel Williams.

To all these and to others I am indebted in one way or another for assistance. I may add the names of Miss M. V. Taylor, Mr. W. J. Hemp, Dr. Cyril Fox, Mr. O. G. S. Crawford, Professor H. J. Fleure, Professor R. C. Bosanquet, Mr. Edward Owen, and Mr. H. J. E. Peake, without fully confessing my indebtedness. Miss D. A. E. Garrod, Sir E. Vincent Evans, the Rev. Canon J. Fisher, Mr. Reginald A. Smith, the late Mr. E. T. Lingwood, Professor W. J. Sollas, the Trustees of the British Museum, the curators of almost every museum in Wales and the borders, the Royal Anthropological Institute, and the Cambrian Archaeological Association have in one way or another helped in the task of preparing or collecting illustrations. And, not least, my thanks are due to the Clarendon Press, for suggesting and in every way facilitating the publication of the book.

Of many omissions in the following pages, one calls for brief comment here. A chapter on the vexed problems relating to the diffusion of Celtic-speaking peoples in pre-Roman times I have excluded as disproportionate to the size and scope of a work intended to summarize material evidence rather than theory. The many hazardous approximations between archaeological and philological theory which have clouded the Celtic Question have only a secondary bearing upon prehistoric Wales. The Beaker-

folk of *c.* 2000 B. C. (Chapter IV) have been regarded as the first Celtic invaders of Britain by Sir William Boyd Dawkins, Lord Abercromby, and M. Loth ; the Leaf-shaped-sword people (Chapter V), some eight or nine centuries later, have been similarly identified by Mr. Harold Peake ; other recent writers have given priority to the peoples of the Hallstatt Period, who may some five centuries later still have brought the Llynfawr hoard to Wales (Chapter VI) ; whilst Mr. E. C. R. Armstrong denied that even the Hallstatt people were with any certainty Celtic, and preferred to postulate a yet later arrival for the first bringers of a Celtic speech. These and other theories can all be proved and disproved. Where all evidence is slight, we may, in the present instance, seek refuge in the scarcity of any definitely ' Celtic ' culture in Wales during prehistoric times, and may regard Celtic Wales, like Celtic Ireland, as pre-eminently a phenomenon of the historic age.

R. E. M. W.

National Museum of Wales,
Cardiff, 1925.

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I

CAVE-MAN

The story of human life in Wales begins with the final emergence of the land-surface from the melting ice-fields of the last great glaciation. These ice-fields had centred locally upon the heights of Snowdonia and of the Brecon Beacons, but had been supplemented by more northerly glaciers which had forged a way down the valley now represented by the Irish Channel. With the problem of the equation of this glacial epoch with those of Scandinavia and the Alps the Welsh archaeologist has, in detail, no immediate concern. It will suffice here to recall that, in the Alpine region, Penck and Brückner established four successive glaciations known respectively as the Günz, Mindel, Riss, and Würm, succeeded by three minor glacial episodes—the Bühl, Gschnitz, and Daun—which may be regarded as pauses or re-advances during the general retreat of the Würm. The applicability of this system to Britain is uncertain; it is increasingly clear that the various oscillations of climate and land-surface during the Tertiary and Quaternary periods, though governed by broadly related conditions, present very distinctive local variations. Towards the end, however, of the long and (at least in some regions) intermittent Ice Age in north-western Europe, these variations are largely merged in a general phase of intensified glaciation which is represented by, though not necessarily co-terminous with, the Würm of the Alpine series. In this wide sense, and in the absence of a suitable local nomenclature, we may say that the Würm glaciation is the background of prehistoric Wales.

During the maximum of this glaciation Wales must have been uninhabitable by man or beast. Beneath the snows, however, in the cliffs both of North and South Wales lay

caves which had previously given occasional shelter to animal life. The caves themselves had probably been formed during a period which may have corresponded with the third inter-glacial of Penck's classification, that is, during the period which elapsed between his Riss and Würm glaciations. During part of this period the sea had risen to heights represented by ' raised beaches ' of pebbles, sand, and shells found from 25 to 50 feet above the present shore. Caves, therefore, which are now high above the tide, were then being shaped in part by action of the sea, which has left its beaches on the rocky floors of some of the Gower caves. The succeeding period of gradual land-emergence corresponded with a climate which for a time was some degrees warmer than that of the present day. The more southerly parts of Britain were overrun by a fauna of sub-tropical or ' southern ' type including many species which have long been extinct. In this pre-glacial period[1] monster proboscidians (*Elephas antiquus*) and rhinoceros of a species now equally unknown (*Rhinoceros leptorhinus*) roamed throughout Wales. In Gower, in the Minchin Hole and Bacon Hole, Falconer found their bones in the lower part of cave deposits unmixed with later species; and Sir William Boyd Dawkins identified them in the caves of Cefn, near St. Asaph.

Land which was accessible to animals must also have been to an approximately equal extent accessible to man. Innumerable flint implements are witness to his presence in southern England, and he may occasionally have penetrated as far north as Yorkshire[2] and as far west as Chester.[3] But no early palaeolithic or ' drift ' implement has been identified in Wales. If this deficiency be not due merely to the scarcity in Wales of suitable implement-preserving

[1] By this phrase is here meant the period prior to the last great glaciation of the Alpine series.

[2] E. R. Collins, ' The Discovery of an Early Palaeolithic Implement in Yorkshire ', *Proc. Prehistoric Soc. of E. Anglia*, iii, pt. iv (1921–2), pp. 603 ff.

[3] Liverpool Committee for Excavation and Research, *First Annual Report* (1908), p. 38.

deposits such as the Thames gravel, the explanation is probably twofold. In the first place, there is no indication that pre-glacial animal life in Wales was other than extremely scanty, and it may well have been insufficient to attract more than an occasional hunter. In the second place, the absence in Wales of native flint or other material suitable for palaeolithic implements would in itself discourage settlement ; and alternatively, from the same cause, any stray adventurer who found himself in this flintless land may be supposed to have used more perishable materials as, for example, the sharpened stake which a happy chance has preserved in Essex.[1]

These general statements may at present be qualified only by very doubtful exceptions. At Pont Newydd near St. Asaph in North Wales implements of Mousterian (mid-palaeolithic) type are said to have been found with bones of *Rhinoceros merckii*, a species which distinctively belongs to the warm or pre-glacial fauna.[2] This discovery is not well substantiated although it is not beyond the bounds of possibility. In more southerly latitudes *Rhinoceros merckii* occasionally, though rarely, survived into the period when a cold or northern fauna was dominant. For example, the bones of a solitary specimen were found with a typical arctic fauna (*Ursus spelaeus*, *Ursus arctos*, *Bos primigenius*, and the *Arctomys* or marmot) in the rock shelter at Krapina in Croatia. Here also were implements of Mousterian or possibly Aurignacian type. In the Grotte des Enfants near Mentone the same species of rhinoceros again occurred with Mousterian types ; and, more remarkable because more northerly, a similar association with the addition of other members of a warm fauna has been found near Montières-les-Amiens on the Somme. There can be no doubt that successive phases of industry in palaeolithic as in later times often overlapped one another considerably, and a similar admixture of different faunas may be presupposed during periods

[1] O. G. S. Crawford, *Man and his Past*, p. 16.
[2] Boyd Dawkins, *Early Man in Britain*, p. 192 ; W. L. H. Duckworth, *Prehistoric Man*, p. 93.

of transitional climate. On southerly sites such as Krapina and Mentone some such explanation is not unreasonable.[1] But the northerly position of Montières and still more of Pont Newydd compels us to assign *Rhinoceros merckii* in these deposits to a pre-Würmian period. Whether the Pont Newydd implements were in reality contemporary with the bones is a question which involves a further element of doubt. Thus, at Villefranche-sur-Saône, *Rhinoceros merckii* and *Elephas antiquus* were thought to have been found with a Mousterian industry, but it has since been shown that the bones, fossilized and water-rolled, belonged to an earlier phase than the implements.[2] Such was probably the case at Pont Newydd, since some of the implements were of quartzite derived from the glacial deposits.[3]

Again, the first occupation of the caves of Ffynnon Beuno and Cae Gwyn in the parish of Tremeirchion near St. Asaph was assigned by Dr. Henry Hicks to a pre-glacial epoch, or alternatively to a remote period preceding some marine submergence.[4] In the latter cave, Dr. Hicks, searching from above for a supplementary entrance which had been concealed, sunk a shaft 20 ft. deep through boulder clay and sand until he reached a red laminated clay and bone earth where he found 'a small but well marked flint flake'. This statement, at first sight, seems conclusively in favour of pre-glacial man in Wales, but it is not necessary to assume that the actual entry excavated by Dr. Hicks was open when the flake found its way into the position in which it was discovered. Sir John Evans, in commenting on Dr. Hicks's discovery in these two caves, declined to accept his inferences on this point.

In all these caves, therefore, the evidence must, at present, be regarded as insufficient to prove the presence of man in Wales prior to the last great (Würm) glaciation.

[1] Compare evidence from Spain, where *Rhinoceros merckii* seems to have survived into the Lower Aurignacian.—M. C. Burkitt in *Man*, 1924, p. 2.

[2] See R. A. S. Macalister, *Text-book of European Archaeology*, i. 586.

[3] Boyd Dawkins, *loc. cit.*

[4] *Quart. Journ. Geol. Soc.* xlii. 15.

During the long period which succeeded the maximum of the Würm glaciation the climate of north-western Europe gradually ameliorated, although the retreat of the ice was (at least in certain regions) interrupted by more than one pause or renewed advance. The consequent reactions upon human and animal life were very much less drastic, however, than those of the main glaciations. The bearing of these minor glacial episodes upon the geology of Wales is quite undetermined, and there it is only possible to presume generally that the gradual retreat of the ice-sheet was accompanied by a slow and perhaps interrupted approach to temperate conditions. During the earlier transition from glaciation we may suppose that Wales endured a climate somewhat resembling that of northern Siberia at the present day with its *tundras* or flooded lands frozen deeply during a long sub-arctic winter. To this period would gradually succeed a drier climate with warmer summers but with winters still considerably colder than those of modern times ; and ultimately in a moist-temperate climate at the end of the Pleistocene epoch sprang up the forests of which more must be said in a later chapter.

On the heels of the retreating ice man entered (or re-entered) Wales and settled there. He came in pursuit of animals adapted by nature to the cold climate of the lands which fringed the ice-barrier. The caves of Wales have yielded in abundance the bones of mammoth, woolly rhinoceros, cave-bear, cave-lion, wolf, bison, and reindeer, together with the horses which formed an important item in the diet of later palaeolithic man. Amongst these animals, man was not the only hunter, for large numbers of hyenas dragged their prey into the caves in which, like him, they sheltered from the cold. The lowlands on which many of these animals must have lived now lie beneath the sea. The dredgers in Holyhead harbour, like the fishermen on the Dogger Bank, have brought to the surface their bones, deposited on what was then dry land ; and on the west and south an increasingly fertile plain stretched far out into what are now the Irish Sea and the Bristol Channel. Britain

itself was perhaps no longer linked to the Continent by a continuous land-bridge, but the Straits of Dover were still no wider than a river-valley though slowly broadening as the land-surface gradually submerged (see below, p. 276).

Before discussing further the period and nature of this early human and animal occupation of Wales, it is desirable to examine in some detail the principal evidence available. It must be said at once that the evidence is in most cases very far from satisfactory. It is derived solely from caves, many of which have been occupied and disturbed intermittently down to modern times. Even in a cave which has escaped serious disturbance it is not always easy for an excavator to avoid some confusion of evidence under the difficult conditions presented by an irregular cave-floor. But even elementary precautions have, more often than not, been omitted, and ' cave-hunting ' has frequently been little else than cave-plundering. Careful observers have sometimes distinguished objects found above stalagmite deposits from others found below ; but the variable and sometimes rapid rate at which stalagmite is formed invalidates this distinction as a decisive criterion of antiquity. The evidence of the Welsh caves, therefore, while it justifies certain general conclusions, is indeterminate in many matters of detail.

The most famous of the Welsh caves is that known as Goat's Hole, at Paviland, in the sea-cliffs of Gower. It was explored shortly before 1823 by Buckland, and has more recently been reinvestigated by Professor W. J. Sollas and others,[1] and still yields occasional implements in forgotten recesses. It lies high up in the cliff, and is approached from below by a steep and difficult path which now overlooks the breakers of the Bristol Channel, but once led towards a broad, thickly wooded plain. Apart from its commanding position, the cave, or ' pocket ' as it might rather be called (Figs. 1 and 2), is comparatively undistinguished. It is accessible to a depth of little more than 60 ft. within the

[1] *Paviland Cave : an Aurignacian Station in Wales*, Huxley Memorial Lecture for 1913 (Roy. Anthrop. Inst.).

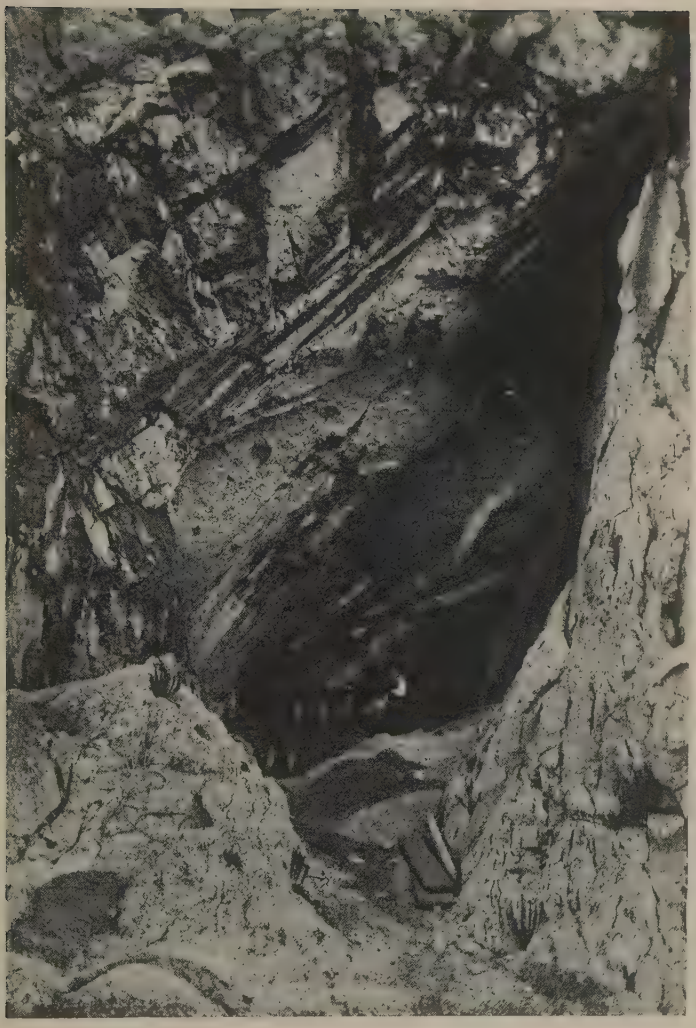

Fig. 1. Mouth of the Paviland Cave, Gower

cliff, and its broken and irregular floor can scarcely have added to the comfort of its early inhabitants. Nevertheless, as Dr. Sollas points out, it opens on to a rocky platform which offers itself as a pleasant verandah commanding a wide prospect towards the south ; and it possesses the luxury of a natural chimney which would carry off some of the smoke from the hearth. Moreover, the shallowness of the cave was no special disadvantage since, even in the larger caverns of England and the Continent, the cave-dweller preferred to occupy the mouth rather than the inner recesses. Paviland must have been a desirable residence in palaeolithic times, and even as late as the Roman era coins were dropped within it by those who did not disdain its shelter.

In regard to the earlier periods of occupation, the decisive factor here, as in other Welsh caves, is afforded by the fauna, of which abundant remains have been found. They include bones of horse (*Equus caballus*), cave-bear (*Ursus spelaeus*), an extinct ox (*Bos primigenius*), *Rhinoceros tichorinus*, Irish elk (*Megaceros hibernicus*), wolf, cave-hyena (*Hyaena spelaea*), and, rarely, mammoth (*Elephas primigenius*). All are characteristic of the later palaeolithic fauna, and the numerous bones of horse may remind us that this animal is specially characteristic of the Aurignacian phase on the Continent—for example, the remains of not less than 100,000 were found round the famous Aurignacian site at Solutré. Many of the Paviland bones, even those of hyena, had been broken for human food ; only man breaks bones long-ways for the extraction of marrow, and some of the bones bear the marks possibly of flint scrapers.

With these bones, and indeed throughout the cave, were found large numbers of cores and flakes of flint, together with some fragments of worked chert. Flint does not now occur naturally in Wales save in the form of small beach-pebbles. It is possible that some of the flint cores used there by ancient man were debris from the chalk which, now long denuded, once extended into South Wales ; but

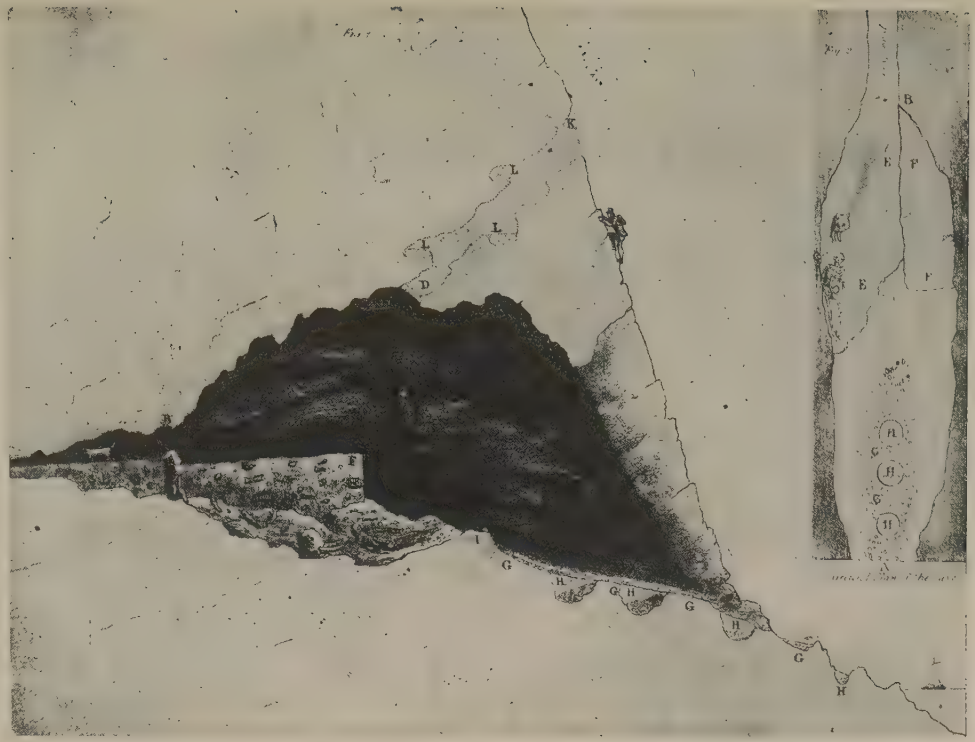

Fig. 2. Section of the Paviland Cave (after Buckland, 1823)

they are absent from the interior of the Principality and it is probable, therefore, that most of them had been brought down by the glaciers from the north and distributed coastwise by tide-action. If the latter view be accepted, it affords further evidence (were such needed) that these cave-industries are later than the maximum of the great (Würm) glacial epoch.[1] A large collection of the Paviland implements has been examined by Professors Breuil and Sollas, who have classified them in accordance with Continental type-series. The types recognized range from Mousterian through Early, Middle, and Upper Aurignacian almost to Solutrian, with a marked predominance of Aurignacian. The classification (both of published and of unpublished specimens) may be criticized as disproportionately precise and elaborate in view of the exceedingly rough character of many of the specimens ; but if the Mousterian group in particular fails to carry conviction, the general analogy of a majority of the better worked flakes with recognized Aurignacian types is unquestionable (Fig. 3). Characteristic specimens are : (1) end-scrapers, or flakes of varying length with abrupt terminal retouches ; (2) squarish or oblique scrapers, the latter sometimes with a concave or notched cutting edge ; (3) approximately circular scrapers with retouches round the whole or part of the circumference ; (4) burins or gravers, some with end-point, others with lateral point. A large proportion of the hundreds of specimens found scarcely merits classification. A few flakes (Dr. Sollas illustrates seven) show attempts at ripple-flaking which slightly recalls poor Solutrian workmanship, and may indicate a comparatively late date for part of the Paviland industry. But none of the Paviland implements approaches so nearly to Solutrian types as does a single specimen from the Ffynnon Beuno cave illustrated below (Fig. 6).

Several fragments of worked bone and ivory have been found in the Paviland cave (Fig. 4). They include five canine teeth of wolf and two of reindeer, all perforated for

[1] Sollas, p. 13.

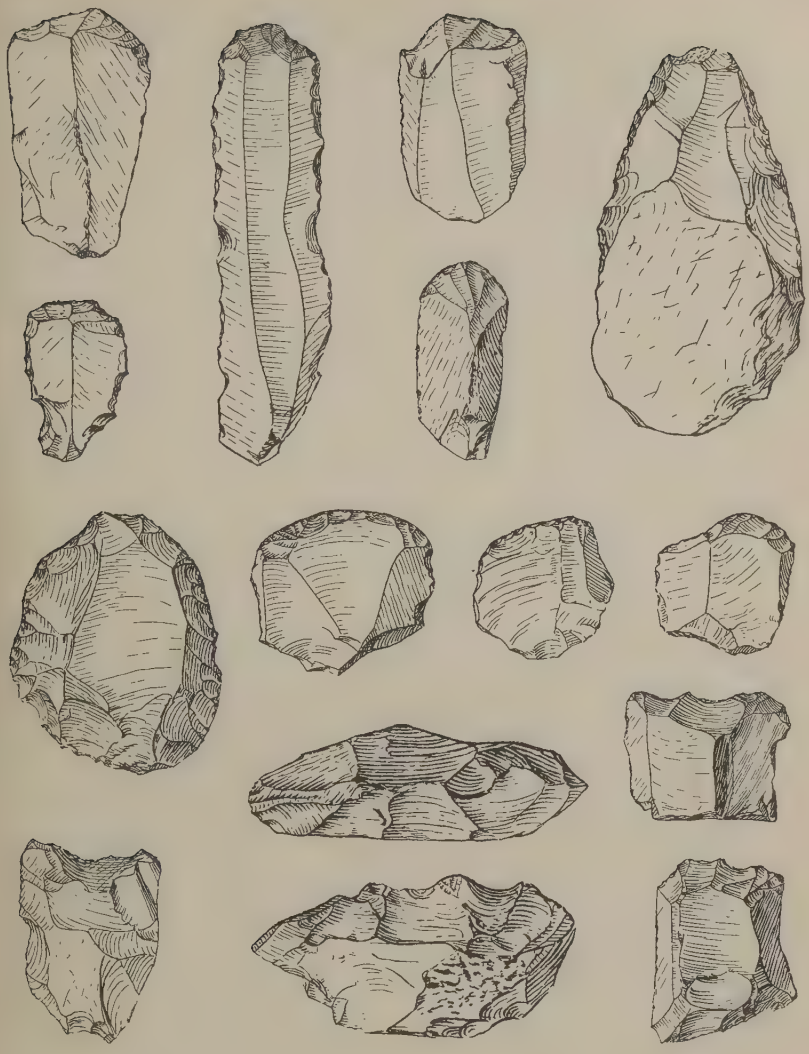

Fig. 3. Paviland Cave, Gower : flint scrapers of Middle Aurignacian type. ($\frac{2}{3}$)

suspension, and doubtless worn originally as a necklace. An ovoid fragment of ivory, also pierced, had evidently been used as a pendant. It had been cut from ' an osseous growth produced by a wound in the pulp cavity of a mammoth's tusk ' ; and by a lucky chance Professor Sollas, who found it, observed that it fitted exactly into an unworked piece of a deformed tusk discovered in the cave by Buckland nearly a century earlier, thus proving that the manufacture of these objects was carried out on the spot. A fragmentary ring, probably a bracelet, had also been cut from a mammoth's tusk, and several small ivory rods, about 4 in. long and $\frac{1}{4}$–$\frac{1}{2}$ in. in diameter, were found in the same part of the cave as the human skeleton shortly to be described. Tongue-shaped pieces of rubbed bone, of uncertain use, resemble the ' lissoirs ' or smoothers found in Aurignacian deposits on the Continent ; and awls of sharpened bone were doubtless used in connexion with the preparation of hides for clothing. Most remarkable of all are the three bone spatulae, carved to represent handle and blade somewhat resembling a paper-knife (Figs. 4 and 5). Their form irresistibly suggests a metallic prototype, and the substance of the bone is less altered than that of some of the objects from the cave ; but it must be admitted that they bear some resemblance to certain Magdalenian spatulae cited by Breuil.[1] Their use is quite uncertain.

Finally, mention must be made of the human bones discovered by Buckland and Sollas. These represent two individuals but with one exception they belong to the one skeleton found by Buckland and called by him ' The Red Lady of Paviland ', a name suggested by the presence of red iron ochre on several of the bones. Unfortunately, the skull and various other bones were missing. A recent re-examination of the long bones has shown that the remains are probably those of a youth about twenty-five years of

[1] *Compte rendu de la XIVe Session, Genève, 1912, Congrès international d'anthropologie*, i, Fig. 25, No. 4 (cited by Sollas). On the other hand, compare the bone daggers assigned provisionally to the Bronze Age by R. A. Smith, *Arch.* lxix. 13.

Fig. 4. Paviland Cave : objects of bone and ivory (about $\frac{1}{2}$)

age, and that they present certain features found commonly, though not exclusively, in the later palaeolithic skeletons on the Continent.[1] Buckland discovered the bones on the west side of the cave-floor, beneath only 6 in. of earth, although upper accumulations may have been denuded from time to time by water-action. During the excavations of 1912 Professor Sollas found in or near this part of the cave a distinctive limestone boulder, set up about 6 ft. from two others of rather smaller size, and thought it ' extremely likely that the boulders had been placed in position—one at the feet and two at the head of the corpse—at the time of interment '. These stones, however, were between 2 and 3 ft. below the surface and, unless this had been altered

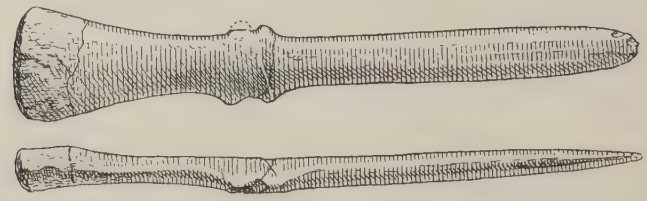

Fig. 5. Paviland Cave : bone spatula. (½)

materially after Buckland's discovery, they must have lain nearly 2 ft. below the skeleton.

The problem of the period of this interment is of some interest, although the absence of the skull robs it of special importance. Professor Sollas and others compare the remains with those of the later palaeolithic races which have been vaguely associated under the name ' Crô-Magnon '. ' The Red Lady of Paviland ', he writes, ' is a Crô-Magnon man. He . . . represents the most westerly outpost of a race which is known to have extended to the east as far as Lautsch and Předmost in Moravia and from Belgium on the north through the Dordogne in France to the margin of the Mediterranean at Mentone.' Buckland, Falconer, and Boyd Dawkins, on the other hand, attributed the interment to later, possibly Romano-British, times. The evidence

[1] Sollas, with F. H. S. Knowles, in the Huxley Lecture cited above.

for and against these widely different attributions may be summarized as follows :

A. *For* a palaeolithic date :

(1) Most of the objects showing human workmanship, in so far as they can be said to be distinctive of any particular period, have generally a palaeolithic facies. Both from this fact and from the large number of bones of pleistocene animals associated with the implements, it is abundantly clear that the cave was extensively occupied by man during the later palaeolithic, and it would be in accordance with analogy to find that he occasionally buried his dead there.

(2) The bones were stained with red ochre, and there is Continental evidence that in later palaeolithic times (as occasionally in subsequent periods) the bodies of the dead, and probably those of the living, were sometimes daubed with this material.

(3) Certain features of the bones described by Professor Sollas and Mr. F. H. S. Knowles correspond closely with those of ' Crô-Magnon ' skeletons from Continental sites.

B. *Against* a palaeolithic date :

(1) Three Roman coins and perhaps other remains suggest that the cave was, like many others, inhabited at subsequent periods (see below, p. 267). The deposits had been much disturbed before Buckland's time, and ' recent ' bones, such as those of sheep, fox, badger, and pig, have been found in some cases actually *underneath* those of extinct mammals. The ' Red Lady ' was found close to the surface, and some of the disturbance of the floor may have been incidental to the interment.

(2) Red ochre occurs naturally in this as in other Gower caves (see below, p. 38), and the staining of the bones may be ascribed to purely natural causes.

(3) The features noted as common to these bones and to ' Crô-Magnon ' skeletons are not exclusively characteristic of this group and are therefore not decisive.

There this minor problem may be left. It does not seriously affect the importance of the Paviland cave as the most productive and the most fully recorded of its kind in Wales. The evidence shows beyond reasonable doubt that the peninsula was inhabited for a considerable space of time by men whose implements, though inferior in quality to those from more southerly sites, may be equated generally with the Aurignacian phase of Continental culture. Its

further implications will be discussed after a brief examination of evidence from other Welsh caves.

Human bones, of quite uncertain period, have occasionally been found in other Gower caves. Several now preserved in the British Museum (Natural History) were discovered by Colonel E. R. Wood in 1864 in the cave known as Cat's Hole. This cave has yielded bones of cave-bear, horse, woolly rhinoceros, mammoth, hyena, and reindeer, together with several long flakes or 'lames' which suggest Magdalenian analogies. The presence of red deer, a stone muller, potsherds ornamented with cord-impressions, and a bronze socketed axe, are typical of the confusion almost everywhere encountered either in the evidence or in its diagnosis. Of most of the Gower caves—Devil's Hole, Crow Hole, Spritsail Tor, Raven's Cliff, and the rest—it will suffice to note that remains of a 'cold' fauna have been found in them in more or less abundance, sometimes with roughly flaked beach-flint or chert and small nuclei from which flakes have been struck. Bosco's Den is recorded to have yielded 750 shed antlers of reindeer. Only in the case of Long Hole, however, have we the useful though not decisive information that flint flakes were found with the bones of pleistocene mammals in a definite deposit which had been sealed by stalagmite.

Passing westwards into Carmarthenshire, we find in the parish of Llansadyrnin the well-known Coygan cave, the finest bone-cave in the Principality.[1] It is formed in the eastern face of a limestone crag which juts out into low-lying meadow-land and sand-burrows at a distance of one and a half miles from the sea. Various explorers have recovered from its floor a large number of pleistocene bones of the 'cold' group—mammoth, woolly rhinoceros, reindeer, hyena, &c.—together with the usual admixture of later species. Man also occasionally entered the cave, apparently in pleistocene times, for Mr. Edward Laws found 'under rhinoceros bones, which were overlaid by stalagmite, a piece of bone whittled and rounded into the shape of an awl, lying alongside of two flint flakes, one of which had indubit-

[1] Roy. Com. Anc. Mons., *Carmarthenshire Inventory*, 555.

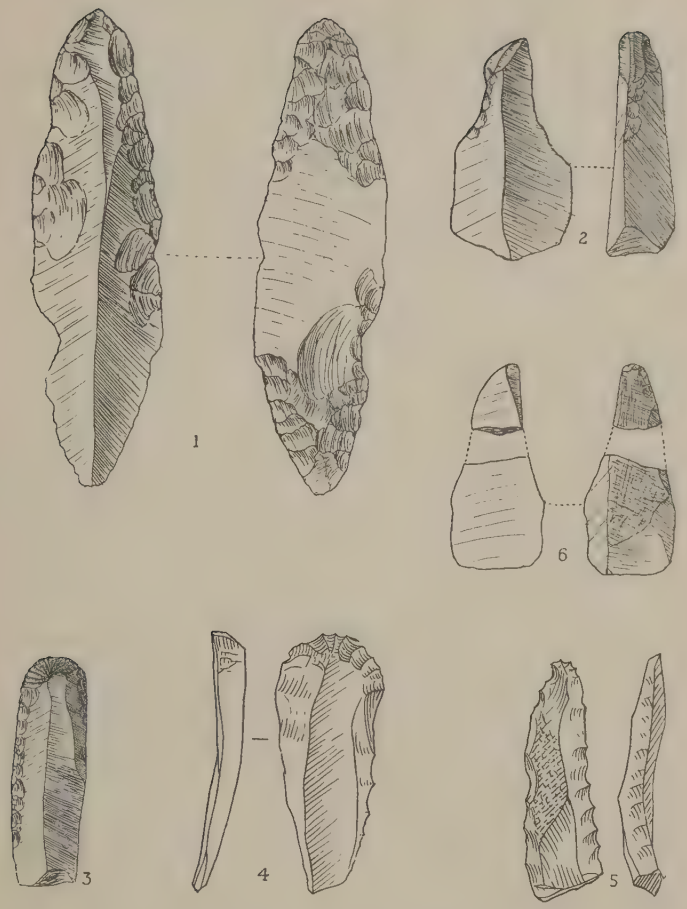

Fig. 6. Flint implements from caves : 1, 2, 6 Ffynnon Beuno, Flints. 3 Cae Gwyn, Flints. 4–5 Hoyle, Pemb. (⅔)

ably been manipulated, the other was a pebble which had been broken, whether by artificial or natural means it is impossible to say'. More recent excavations have revealed two worked flakes of chert found with remains of mammoth from 18 in. to 2 ft. $7\frac{1}{2}$ in. below the stalagmite and close to the sand floor. One of these was submitted to Mr. Reginald A. Smith and Sir Arthur Keith, who reported that 'it is too slight a "document" to build on, but its form and working suggest that you may find in Coygan a Mousterian culture. So far as it goes, that flake suggests this culture but does not prove it.' Two other small pieces of chert have been sifted out of the cave-earth, but none of the flakes yet found is sufficiently distinctive to support even a provisional theory as to age. The bone piercer or awl found by Mr. Laws recalls those from the Paviland cave.

In South Wales the limestone cliffs in the neighbourhood of Tenby, Pembrokeshire, mark the westerly limit of the bone-caves. In that known as the Hoyle, flint flakes have been discovered in association with the bones of cave-bear and reindeer beneath a layer of stalagmite, and Sir William Boyd Dawkins found 'many flint flakes, and bones broken by man', in the breccia of the same cave. A few flakes of flint and chert from the Hoyle are preserved in the Tenby Museum (Fig. 6); they are from $1\frac{1}{2}$ to $3\frac{1}{4}$ in. in length and most of them are merely roughly flaked lamellae which may well be poor late palaeolithic work but cannot be ascribed to any particular phase. One flake alone shows any extensive retouching; this, although its find-spot in the cave is unknown, may be of palaeolithic date.[1] It has a battered back, with vertical retouches, and suggested to Mr. Leach a La Gravette point of Aurignacian period. A fragment, possibly of a similar implement, has been found together with a few untrimmed flakes in the stalagmite of Nanna's Cave, on the Isle of Caldey.[2] The stalagmite seems to have contained bones both of pleistocene and of recent fauna, and a number of human bones of indistinctive character.

[1] A. L. Leach, in *Arch. Camb.* 1916, p. 165, Fig. 5.
[2] *Ib.*

In North Wales a series of caves and fissures at Cefn near St. Asaph have yielded evidence of occupation both in post-glacial and, doubtfully, in pre-glacial times (see above, p. 19). One, near Cefn Hall, was explored as long ago as 1833 and produced cave-bear, hyena, and reindeer, together with occasional flint flakes which generally resemble those already described from the Hoyle. Some at least of them, however, were found with a human skull and cut antlers of stag which may be referred to a considerably later period. Other caves in the same county at Plas Heaton and Galtfaenan yielded similar fauna with the addition of bison and the jaw of a glutton, and many of the bones seem to have been gnawed by hyenas which must have abounded here as elsewhere in Wales. More noteworthy are the observations made by Boyd Dawkins and others in a cave between Cefn and Pont Newydd. Here ' the remains (of the same group of animals) are embedded in a stiff clay, consisting of rearranged boulder clay. From it, I have identified the brown, grisly, and cave-bear. A further examination by the Rev. D. R. Thomas and Professor Hughes has recently resulted in the discovery of rude implements of felstone, and a tooth, which has been identified by Professor Busk as a human molar of unusual size.' More details of this discovery could be desired. The rearranged boulder clay and the water-worn condition of the remains may have been due to normal water-action over a long period of time or may perhaps represent the work of one of the minor glacial advances which succeeded the Würm in certain parts of Europe.

More extensive evidence of human occupation is recorded from the Ffynnon Beuno cave in the same district. With a mixed pleistocene and recent fauna which included lion, cat, reindeer, mammoth, horse, *Rhinoceros tichorinus*, hyena, Irish elk, red deer, and wild boar were found a bone awl similar to that already recorded from Paviland, two other fragments of roughly worked bone, and several flint flakes. Some of the flakes are crudely worked to a semblance of the end-planes or end-scrapers of sub-Aurignacian type, as at

Paviland ; but one, more elaborately worked (Fig. 6, No. 1),[1] suggests comparison with the Font-Robert points of late Aurignacian age and even remotely anticipates Solutrian forms. Again, unfortunately, the implements are inadequate both in number and in type to compensate for the lack of information regarding their stratigraphical relationship with the various species found.[2]

In the same county, in the parish of Newmarket, a cave discovered by Sir William Boyd Dawkins on the south side of the Gop Hill has been explored more than once since 1886. There seems to be no evidence of human occupation earlier than the neolithic period, but in a deposit of grey clay above a clean layer of yellow clay (possibly glacial) were found remains of cave-hyena, bison, reindeer, roedeer, horse, and woolly rhinoceros. Farther west in Carnarvonshire, a cave apparently containing animal bones of the same period was found about 1880 on the south-eastern face of Great Orme's Head. The discovery is ill recorded, but canine teeth of cave-bear pierced for suspension like those found in the Paviland cave seem to have been discovered, while other pierced teeth are said to have been those of pig. The contents of the cave included remains of recent animals and of at least four human beings ' of short stature, with long skulls, believed to be of the same race that once dwelt in southern Europe in the neolithic epoch '.[3] The period of these skeletons is quite indeterminate, but almost certainly post-palaeolithic.

Looking back upon the evidence summarized in the preceding pages, it is possible, in spite of persistent doubt, to draw certain conclusions which are not likely to undergo serious modification. The worked mammoth ivory and the general character of the implements in the Paviland cave, supported by the association of flakes with pleistocene mammalia below the stalagmite of several other caves, are

[1] I am indebted to Miss D. A. E. Garrod for supplying the drawing. An inadequate illustration appeared in *Quart. Journ. Geol. Soc.* xlii. 9.

[2] *Quart. Journ. Geol. Soc.* xlii. 9. Specimens in the British Museum (Natural History).

[3] *Arch. Camb.* 1881, p. 335 ; 1885, p. 234.

sufficient to prove the presence of man in the later palaeolithic phase. The facies of most of the Paviland implements is Aurignacian, but their general workmanship is poor in the last degree. Even so, it is considerably better than that of the comparatively few implements—usually rough *lamellae* or nondescript chips with little or no retouching—found in the other caves. Occasionally, as in the Coygan and the Hoyle caves, solitary implements have vaguely suggested analogies from the Mousterian or Aurignacian phases. But the warning uttered by Sir Arthur Keith in the case of one of these, that 'it is too slight a document to build on', must be repeated with emphasis in all such isolated instances. The rudimentary or decadent character of the Paviland industry may be interpreted in one of two ways; either the Paviland men were the inferior outcasts of the contemporary Aurignacian races of the Continent, or they were their descendants who, in this remote region, retained their traditional culture in a decadent form after the more thickly populated and progressive Continental settlements had already passed into a subsequent phase. It is possible, indeed, that both these alternatives may have been contributory causes. It is at least unsafe as yet to synchronize the Welsh palaeolithic industries closely with the Continental series. Whilst remembering that certain observers have recognized slight traces of Mousterian and of Solutrian or sub-Solutrian technique in a few cases, a majority of the implements available reflect either poor Aurignacian or Magdalenian prototypes.

The known remains of palaeolithic man and fauna in Wales have been found exclusively in caves. This is almost inevitable since the conditions present in caves are peculiarly favourable to the preservation of bone, and post-glacial palaeolithic artefacts, unless associated with animal remains, can rarely be identified with complete certainty. In reconstructing a picture of Wales in the Old Stone Age, therefore, we must bear in mind the important reservation that our evidence may be restricted quite accidentally by the limited distribution of the carboniferous limestone in which all the

caves occur. Nevertheless, it is likely enough that, at least in the earliest times, these cave-formations were in fact the centres of human life in Wales. The sub-arctic climate which must have persisted for a long period in the land recently vacated by the retreating ice-field may be supposed to have driven animals and men alike to the ready shelter proffered by caves and cliffs.

The direct results of such conditions upon the social and intellectual development of man are as obvious as they are important. The comparatively solitary hunter, who, in the more equable climate of earlier times in Europe, had lived without difficulty in the open, was now (we may imagine) brought with greater frequency into the companionship of his fellow men in the few localities where caves were to be found. Thus was encouraged the development of speech and the interchange of ideas during long winter nights and storm-bound days. Man, no longer able to live from hand to mouth, perforce took thought of the morrow and stocked his larder. The cold against which nature clad the animals around him quickened his invention, and with needles of bone and threads of sinew and fibre, he began to clothe himself in their skins. Not least, during hours of enforced inactivity idle hands turned to scribbling upon fragments of bone and the broader surfaces of the cave walls, and art was born. In this respect again, however, the British caves have hitherto produced but poor analogies to the rich yield of Continental sites. In Wales no single example of palaeolithic art has yet been found. A few years ago visitors to the Bacon Hole in Gower rejoiced to find apparently deliberate streaks of red ochre in the recesses of the cave, and claimed that here at last in Britain had been found the handiwork of a palaeolithic painter. Unfortunately, the number and character of these stripes varies from time to time. There is now no doubt that they are of natural origin, and they have been accurately described as ' local colour '. Although the poor quality of the cave-implements in Wales is not a hopeful sign, it is still possible that, like their kinsmen on the Continent, the neighbours of Paviland

man may yet be found to have included artists amongst their numbers.

In recent years two sciences have combined to bring the cave-man nearer to us. The labours of Swedish geologists, notably of Baron de Geer, have set a partial limit to the extravagant guesses of the earlier antiquaries who sought to determine the antiquity of man. The banded clay of Sweden has been identified by these geologists with the annual deposits left by the Scandinavian ice-sheet during its intermittent retreat, each distinctive stratum of the clay representing the work of a single summer upon the fringe of the ice-field. It is unnecessary here to enlarge upon the details of this scheme, but it is not unreasonable to suppose that, by counting these annual deposits between the south and the north of Sweden, it is possible to deduce an approximate time-table for the glacial retreat in that area. This calculation was effected by digging pits through the banded clay at intervals between southern Scania and Lake Ragunda, which marks the limit of the withdrawal. About 5,000 bands were found in the clay between these two points, and the subsequent deposits in the lake, which was drained in 1796, amounted to 7,000. It may thus be about twelve thousand years since the south of Scandinavia became habitable. This estimate is now widely accepted as a working basis. It would be rash to generalize from it with too much assurance, and there is no reason to suppose that the retreat of the ice in Britain corresponded in detail with that in Scandinavia. It is probable enough, however, that, as the conditions affecting the one region must have affected the other in a generally similar way, the margin of difference did not exceed a few centuries. The latitude of Wales corresponds with that of northern Germany, from which the ice must have begun its northward retreat some thousands of years earlier than in Scania. This additional period has been estimated (or guessed) at about five thousand years, making a total of seventeen thousand years between the beginning of the retreat of the Würm glaciation and the present day. At some moment in the earlier part of this

period, we may suppose that man first entered Wales. It is not improbable that the mountains of Wales retained their glaciers for some time after the beginning of the retreat from northern Germany, but, as a provisional land-mark, it would not be unduly rash to place the beginning of human life in Wales between 15,000 and 10,000 B. C. The breadth of this ' margin of error ' is of no special moment in a general review of human civilization. To us, who have within three-quarters of a century rushed from the era of the stage-coach to that of the aeroplane, a millennium is almost an abyss of time. But in earlier phases, when experience was rudimentary and more slowly augmented, man worked during many centuries or even many millennia towards the slight improvement of the shaping of a piece of flint or bone. The time-unit broadens rapidly as we travel backwards in the history of man.

If geology has done much to place early man in chronological perspective, anthropology has some claim to have set him in our midst. The various breeds of man who found their way into southern and western Europe during the wane of the last great glaciation formed so striking a contrast with the ill developed human types which immediately preceded them, that they have been loosely grouped together as a single race. This so-called ' Crô-Magnon ' race, however, has now disappeared from scientific discussion, and the later palaeolithic types are gradually falling into various categories, amongst which the specimens actually found at Crô-Magnon are by no means the most important. Whether or not the human bones from the Paviland cave should be assigned to so early an epoch, it cannot be doubted that the first (post-glacial) colonists of Wales either belonged to or were not widely different from some one of these Continental groups. Now though the later palaeolithic skulls are essentially similar to those of modern Europeans, they present in varying degrees certain features which are so rare in living types as to call for special comment when found. Thus, the long, narrow head common (with variations) to all known palaeolithic peoples is associated in these post-glacial races with very prominent cheek-bones, due to

an unusually powerful development of the jaw muscles—a feature which doubtless reflects the hard conditions under which the type had been evolved. With these contrasting features are found others which vary from group to group. A small series represented by the skulls from Brünn in Czecho-Slovakia and from Combe Capelle in Périgord, France, have strongly marked brow ridges and glabella, a somewhat receding forehead, a moderately broad nose, and a slightly projecting upper jaw. Professor Fleure has drawn attention to the frequent presence of all these characteristics of skull-form in the tall, very long-headed, dark and bony type in the remote moorlands around Plynlymmon and the Black Mountains of Carmarthenshire. These districts have for a long time exported rather than imported men, and there, if anywhere, would it be natural to find survivals of very early racial stock. The concurrence of these various factors has led Dr. Fleure to suggest tentatively that the exceptional type thus represented in western Wales may indicate a more or less direct line of descent from a palaeolithic group or groups.[1] If this hypothesis be correct, it can be claimed for these Welsh highlanders, as it has been claimed for certain inhabitants of the Dordogne, of Brittany, and perhaps of islands off the coast of northern Holland, that they represent a very striking instance of the persistency of a population little changed in physical type through thousands of years.[2]

[1] *Journ. Roy. Anthrop. Inst.* xlvi (1916), pp. 61 ff.
[2] Ripley, *The Races of Europe* (1899), p. 181.

[Note.—*Cave Hunting* (1874) by Sir W. Boyd Dawkins has not yet been superseded in regard to Wales, but should be supplemented by the more recent papers cited above. Material from Welsh caves may be studied in the following collections: British Museum (Natural History), from Cat's Hole, Gower, and Ffynnon Beuno and Cae Gwyn, Flints.; British Museum (Bloomsbury), from Long Hole, Gower; University Museum, Oxford, from Paviland, Gower; National Museum of Wales, Cardiff, from Paviland and Coygan; Royal Institution of South Wales, Swansea, from Long Hole, Nottle Tor, Spritsail Tor, Paviland, and other Gower caves; Carmarthen Museum, from Coygan; Tenby Museum, from Longberry Bank, the Hoyle and Nanna's Cave, Pemb.; Cefn Hall, Denb., from Cefn and other local caves; Mr. E. Morgan, Cae Gwyn House, St. Asaph, from Cae Gwyn; St. Beuno's College, St. Asaph, from Ffynnon Beuno and Cae Gwyn.]

II

THE NEW STONE AGE

No modern archaeologist believes literally in the cataclysm which was at one time thought to have divided the Old Stone Age from the New. Nevertheless, in distant retrospect, the transition between the two great eras, as it were between a remote and esoteric Europe and a Europe approximately as we know it to-day, seems to have been of comparatively brief duration when we consider the magnitude of the change involved. At a period which may be guessed at ten thousand years ago, the increasing warmth of the climate and the reluctant retreat of the glaciers, with all the attendant redistribution of water and vegetation, seems finally and with some suddenness to have reached a point at which animal (including human) life was compelled to re-adapt itself actively to the conditions of a changed environment. The gradual drying up of the Sahara drove human and animal life northwards towards the coasts ; similar changes in the Middle East emptied new peoples into central and northern Europe ; and in the old centres of palaeolithic civilization in the centre and the west the arctic fauna died out or fled northwards in the wake of the departing snows. The whole milieu of human life and culture was drastically modified. In Europe, western Asia, and northern Africa civilization was momentarily adrift.

In this period of flux Britain, perhaps after a brief period of re-emergence, was severed for the last time from the Continent by a slowly widening channel (see below, p. 279). Partly perhaps for this reason the reactions of the somewhat ineffective Continental cultures of the period are poorly marked in the British Isles, and their evidence is frequently open to dispute. From time to time, however, attempts have been made with varying success to identify

three of these cultures in Britain. The so-called Azilian culture, a decadent descendant from the latest palaeolithic phase in the south of France, has been recognized in a few caves in northern Britain; the 'Maglemose' culture, an intruding maritime civilization best known in Zeeland, has left slight and doubtful traces in the East Riding; and the Tardenoisian phase, distinguished by the minuteness of its flint implements (originally, as it seems, perfected amongst the fisher-folk along the northern shores of Africa), has been identified with somewhat kindred 'microlithic' industries at Hastings, in Cornwall, and in other coastal and even inland districts of Britain, such as the Pennine Chain. Of these three cultures, the first and last have been tentatively recognized in Wales.

Discoveries of what may be termed flake-industries have been made in recent years at various points along the Welsh coast, notably at Aberystwyth, at Newport in Pembrokeshire, along the cliffs of the southern Pembrokeshire coast, at Burry Holm in Gower, and amongst the sand-dunes near Porthcawl in Glamorgan. The characteristics of these industries are the presence of flint (or occasionally chert) nuclei, with large numbers of small flakes or spalls which have been struck from them. Some of these spalls assume distinctive shapes, especially that of a pointed flake with a battered back, though definite secondary working is exceptional. Arrowheads of recognized types are absent, as are axes or large implements of all kinds. The precise, geometrical forms characteristic of the minute Tardenoisian industries on the Continent are rare.

These flake-industries are commonly found on or near the surface. At Aberystwyth, however, careful excavations carried out by Mr. Roger Thomas, Professor Fleure, and others at the foot of the sea-cliff in 1923 are more informative. From top to bottom the sections revealed, first, 1½ ft. of earth containing occasional flints with modern remains; secondly, 2 ft. to 2½ ft. of dark hard loam containing a few traces of charcoal but practically no other relics; thirdly, a layer about 1 ft. deep of light-red friable loam containing

the flakes in fair abundance (Fig. 7), with a little charcoal, a few burnt stones, a ' polishing stone ', and two stones which ' seem to have been pierced '. This third layer immediately overlay the undisturbed glacial drift. The position of the industry in the soil is thus consistent with an early post-glacial date, and I understand that Professor Breuil has pronounced some of the flakes to be of Tardenoisian character.

Fig. 7. Flakes and scrapers from the Aberystwyth ' chipping-floor '

We may provisionally accept this verdict, with certain reservations : (1) The only flint readily available to shore dwellers in Wales is the small beach-rubble distributed coastwise by glacial action ; hence at any period small flake-implements are liable to predominate.[1] (2) Only those industries, therefore, which, as at Aberystwyth, can be shown with fair certainty to exclude late forms, such as barbed and tanged arrowheads or polished stone axes, can even

[1] Cf. T. C. Cantrill, *Arch. Camb.* 1915, p. 205.

provisionally be regarded as Tardenoisian; this excludes the southern Pembrokeshire and Porthcawl series, where admixture occurs and where the flakes may therefore be of much later date. (3) Even if we tentatively accept a Tardenoisian affinity for some of these flake-industries, we must admit the poverty of their workmanship and must be prepared to regard them as derivative phases perhaps of considerably later period than the Continental Tardenoisian.[1]

With somewhat similar reservations, attempts have been made to approximate some of the flake-industries found abundantly in south-west Pembrokeshire to certain of the Continental transitional cultures. These industries occur often in well-marked groups or 'floors' on the present sea-cliffs, and extend to the adjacent forest-beds which during or since neolithic times have been submerged beneath the sea. The process of comparatively rapid submergence is thought to have been completed by the early part of the second millennium B. C., but prior to that period had been interrupted sufficiently to enable observers in some places to distinguish distinct strata of marine forest. 'The higher of these submerged forests', states Mr. Cantrill, 'have yielded implements of polished stone, but from the lower ones flakes alone seem to have been recorded.'[2] If the

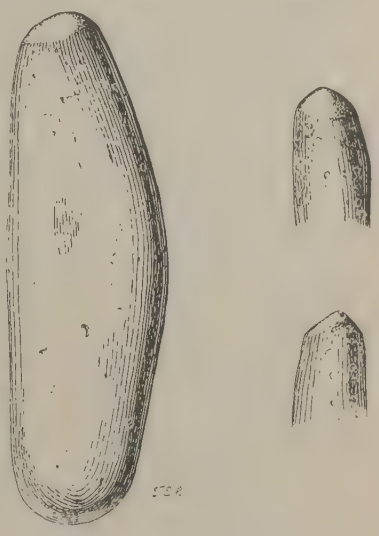

Fig. 8. 'Limpet-scoop' from Ramaskell, Pemb. (½)

[1] A similar judgement has been pronounced independently by Dr. Fleure since this chapter was written.—*Arch. Camb.* 1923, pp. 225 ff.

[2] For other 'finds' in the submerged forest off the Pembrokeshire coast, see a valuable note by A. L. Leach, *Arch. Camb.* 1913, pp. 400 ff.

evidence is representative, we may suppose that the inhabitants of the lower forests were in an early neolithic or even in some preceding stage of culture ; but the flakes are of the roughest type and do not help the inference. On the other hand, attention has been drawn to a number of elongated pebbles with abraded ends, found on some of the cliff ' floors ' (Fig. 8).[1] The use of these pebbles has been disputed, and the suggestion that they were used as ' limpet-scoops ' is not in itself convincing nor is it borne out in Pembrokeshire by association with limpet or other shells. But pebbles of this kind are not common on ancient sites, and seem to be specially distinctive of transitional ' Azilian ' deposits on the Continent, in Yorkshire, and in Scotland. A typical ' floor ' near Marloes in Pembrokeshire yielded 6 limpet-scoops, 10 good flakes, 1 hollow scraper, 7 cores, 10 nodules, slightly chipped, and 56 external flakes, chips, spalls, and residual ' lumps '. This group is consistent with a transitional or early neolithic date ; but unfortunately our confidence is shaken by the occurrence near Dale, in another group otherwise similar, of a tanged and barbed arrowhead which can scarcely be earlier than the extreme end of the Neolithic.[2] It must be confessed that at present the opening phases of the New Stone Age in Wales are lost in uncertainty.

The starting-point for the study of neolithic implements in western Britain must long be the great ' stone-axe factory ' discovered in 1919 in Carnarvonshire on the seaward slopes of Penmaenmawr, above Graig Lwyd farm. Here within a third of a mile the hill-side rises from 500 ft. to 1,000 ft., and over a wide area between and sometimes beyond these limits the scree and loamy talus are mixed with innumerable axes, picks, flakes, &c., hewn from the local igneous rock nicknamed commercially ' Penmaenmawr granite '.[3] Completely finished implements are rare ; most had been discarded during manufacture, though a fair number of these were in the last stages of workmanship at the time of

[1] *Arch. Camb.* 1915, p. 196. [2] *Ib.*, pp. 179, 184.
[3] S. Hazzledine Warren, *Journ. Roy. Anthrop. Inst.* xlix. 342 ff. ; li. 165 ff. ; *Arch. Camb.*, 1922, pp. 1 ff.

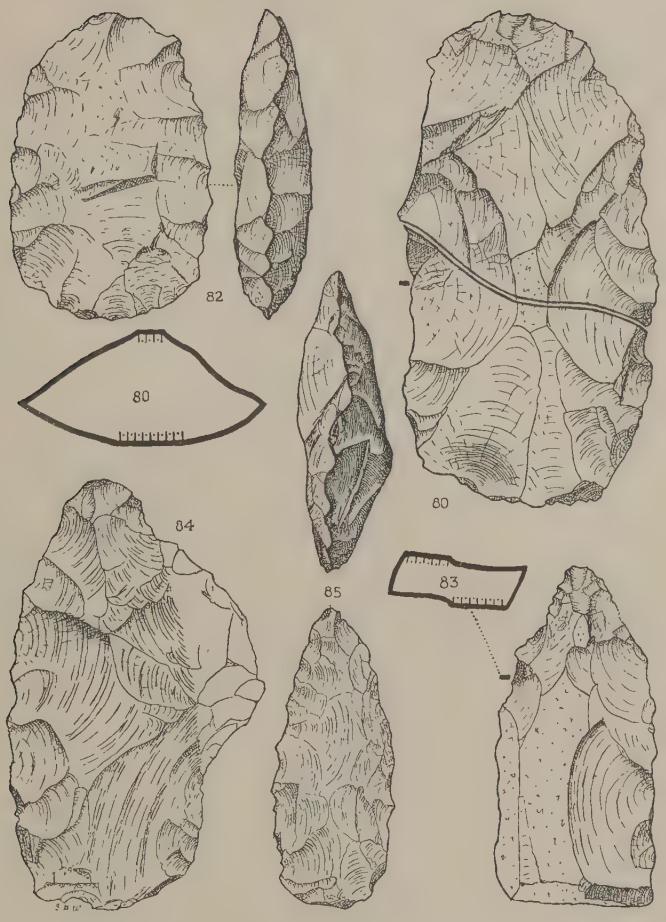

Fig. 9. Graig Lwyd axe-factory : axes in various stages of manufacture. ($\frac{1}{4}$)

rejection. Two hearths, or accumulations of burnt material with a few pot-boilers, were found during the excavations, but there was no pottery or other remains of a kind which might suggest settled habitation. Where the axe-makers lived is yet to be discovered.

A working area of this size at first sight suggests comparison with the great prehistoric flint-mining areas of Grimes Graves in Norfolk and Suffolk, Cissbury in Sussex, or Spiennes in Belgium. Such a comparison is probably without justification. The Penmaenmawr rock is poor, albeit the best locally obtainable ; it is at the same time tough and brittle, and the extent of the debris of the industry is due largely to the accidental breakage or mutilation of implements during manufacture. The unlikelihood that artefacts of this unfavourable material would be in more than local demand is borne out by our present knowledge of their distribution. Apart from three polished axes from Anglesey (two of them from the neighbourhood of Menai Bridge, Fig. 17, 1) and a fourth, possibly of this material, from Dolgelly, a fairly extensive search has failed to reveal any traces of this industry beyond the immediate vicinity of Penmaenmawr. The Graig Lwyd ' factory ' remains at present a monument of obstinate but frustrate endeavour.

The primary interest of the site lies in the varied assemblage of implement-types which it has produced (Figs. 9–12). The principal groups are as follows (markedly immature forms being disregarded) :

I. Chipped axes with pointed butts (numerous).
II. Chipped axes with broad thin butts (numerous, upwards of 200).
III. Four fragments of polished axes, two of them rechipped ; original form uncertain.
IV. Double-ended axes, squarish at either end (about 31 specimens from Graig Lwyd itself, and another, partly polished, of the same material from Menai, Fig. 17, 1).
V. Picks, sometimes roughly resembling Campigny or Thames types, but often more elongated (about 20 certain specimens).

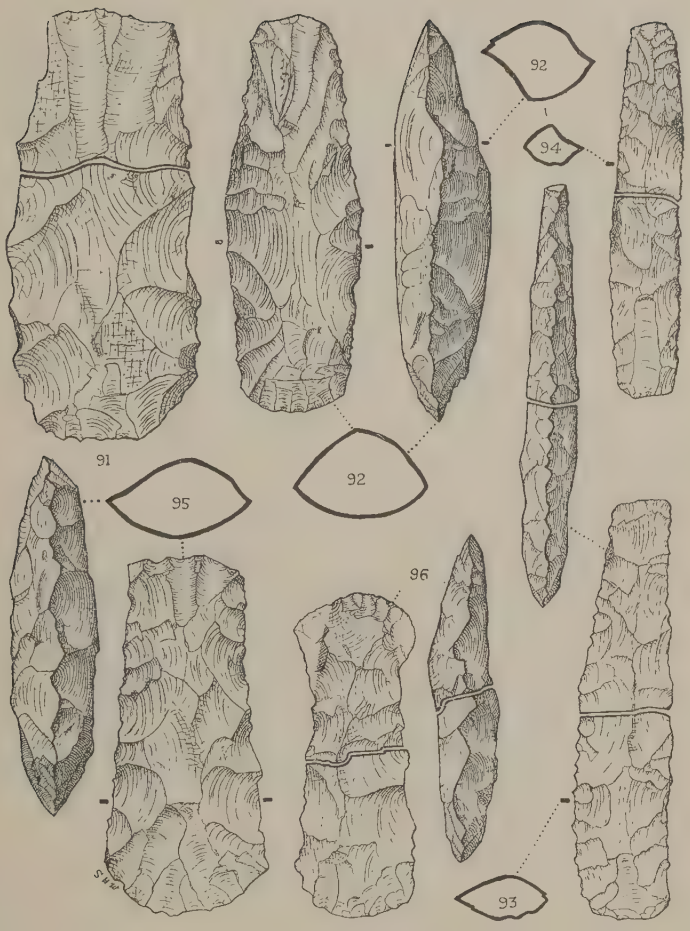

Fig. 10. Graig Lwyd axe-factory: axes and picks. ($\frac{1}{4}$)

VI. Rough adzes and large scrapers, sometimes made from a flake and unworked on one side (few).

VII. Flaked disk (one).

VIII. Waisted axe-hammer, probably made from a broken axe ; partly shaped by battering and pecking (one).

IX. Several hammer-stones, sometimes of the local rock and sometimes pebbles of hard erratics from the sea-beach.

X. Here may be included a fragment of stone, $4\frac{1}{2}$ in. long, very roughly incised with a multiple chevron pattern. This is the only decorative carving from Wales to which a (presumably) Stone-Age date can be assigned (Fig. 13).

Nothing approaching stratification was observed by the excavators, and though at one place the pointed-butt axe and at another the thin-butt axe seemed to predominate, the various types were intermixed over the whole area in such a way as to suggest approximate contemporaneity. If, therefore, we make a hazardous attempt to apply the Scandinavian classification [1] to the Graig Lwyd series, we must be prepared to some extent to telescope the Scandinavian chronology. In the fairly well established scheme of the neolithic era in Scandinavia, axes with pointed butts precede the megalithic period, whilst those with thin butts are contemporary with the earlier megalithic monuments (dolmens). Brögger postulates 3400 B. C. as a working date for the transition from pointed to thin butt. A literal inference from axe-forms alone might at first sight suggest that the Graig Lwyd industry should be ascribed to some such period of transition. A wider view of the evidence, however, does not bear this out. The two types of axe on this site are almost equally numerous and equally mature in form ; real transitional forms are difficult to find. Moreover, on other grounds it is not easy to make the Scandinavian scheme fit into Britain. The partial approximation between British and Scandinavian axe-forms ends with the

[1] Summarized with bibliography by R. A. Smith, *Proc. Prehistoric Soc. of E. Anglia*, ii, pt. iv, pp. 490 ff. ; and *Arch.* lxxi. 113 ff.

thin-butted type, and the almost complete absence of subsequent Scandinavian types from Britain is plausibly explained by the advent of metal-working into this country at a period some centuries before the corresponding 'industrial revolution' in the Baltic lands. On this supposition the thin-butted axe was in use in Britain in 2000 B. C., the

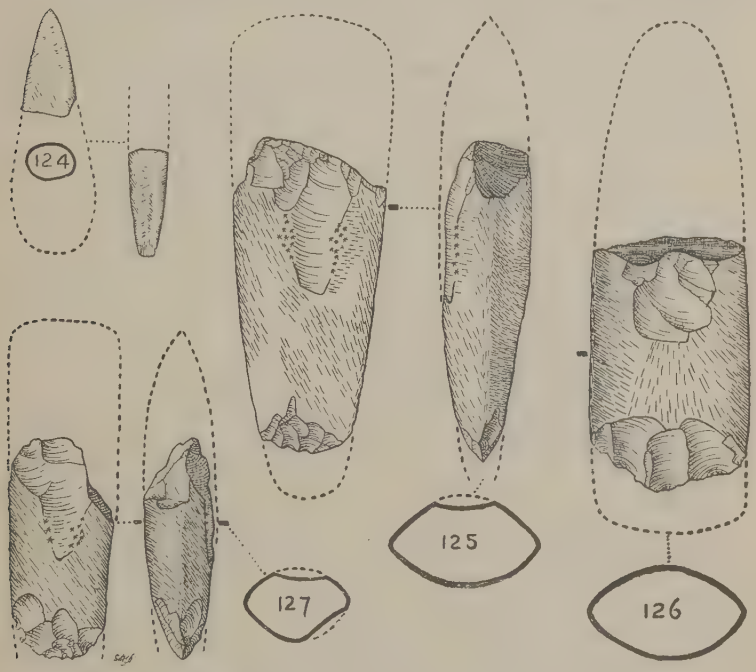

Fig. 11. Polished axes from Graig Lwyd. (½)

conventional date for the beginning of the British Bronze Age, and had co-existed with all the principal phases of the British megalithic period. This long monopoly (1,400 years, if we carry it back to Brögger's initial date) is not convincing without further evidence, and it seems better to assume that during the third millennium B. C. more than one type of axe was in normal use in Britain. It is likely enough that certain forms, such as the thin butt, appeared earlier in Scandinavia than in Wales. Alternatively, we may see in the Graig Lwyd

forms a partially independent line of development, perhaps due in some degree to the crude nature of the material used. The long picks, for example, are in some cases reminiscent of types earlier than the pointed axe, whilst the waisted hammer

Fig. 12. Flake-adzes from Graig Lwyd. ($\frac{1}{4}$)

echoes or anticipates the hammer-types of the Early Bronze Age. It is wisest to withhold any judgement based on Scandinavian analogies, and, as suggested above, to regard the heterogeneous industry of Graig Lwyd as a fresh starting-point from which to study the later Stone-Age implements of western Britain. We may hope, nevertheless, that the discovery of unmutilated polished axes on

the site may eventually help to establish useful points of contact with the Baltic series.

If we pass now to scattered individual 'finds', we can do little more than note representative examples with reference to the established classification in most cases without prejudice as to date. It is tempting, however, to ignore this reservation in the case of a roughly chipped flint pick from Pencaer, Pembrokeshire (Fig. 14). The type, accidentally or otherwise, approaches that of the 'Thames' or 'Campigny' pick, dated to the beginning of the neolithic period, before polishing was known or at any rate widely practised. No other specimen distinctively of this type has been found in Wales, and, like other flint implements of this size, it may with probability be regarded as an intruder. The ascertained fact that those stones of Stonehenge which seem to have formed an earlier circle on the Wiltshire site had been brought from Pembrokeshire implies a close connexion of long standing between these two distant counties (see below, p. 100); and a Wiltshire flint in Pembrokeshire would certainly be less remarkable than is a Pembrokeshire stone-circle in Wiltshire.

Fig. 13. Engraved stone plaque from Graig Lwyd. (½)

Two other flint axes from Wales may be noted. The first is of white chalky flint, and was found on Maryborough Moorland, in the parish of Dale, Pembrokeshire (Fig. 17, No. 2). It has a pointed butt and, in section, is a pointed oval with flattened sides—a form which is thought to have preceded 'the pointed oval section, which gradually merged into a lozenge, at least in this country, and later approached the oblong section of the Scandinavian dolmen-celt'.[1] The second flint axe is one of a hoard of four polished axes

[1] R. A. Smith, *Arch.* lxxi. 120.

found in 1860 at the Upper Paper Mill on the River Grwyney some two miles south-east of Crickhowell, Breconshire (Fig. 15). It almost certainly came originally from the south of England, but the remainder of the hoard was made of argillite from Wales.[1] In two cases the butts had been damaged and roughly re-chipped; they appear to have been transitional between the 'pointed' and the 'thin' types. The section is a pointed oval, with a marked tendency to squared or flattened upper and lower edges, as in the axes of the Scandinavian dolmen-period (see above). The type is perhaps later therefore than that of the Dale axe,

Fig. 14. Flint axe from Pencaer, Pemb. ($\frac{1}{2}$)

and may be referred to the last phase of the British neolithic. A small stone axe of analogous type is said to have been found at Llansilin, Denbighshire, in a cairn which also yielded a late bronze socketed axe (Fig. 16), but unfortunately the record of this apparently important discovery is too vague to rank as evidence.[2]

Other axes illustrated (Figs. 17 and 18) are a well-polished specimen of diabase with pointed butt from Celmi in the parish of Llanegryn, Merioneth; an axe of similar form said by Mr. E. Laws to have been 'found under the Cromlech Fynnondruidion, Fishguard', Pembrokeshire; an unusually large axe of felsitic rhyolite with thin pointed butt and

[1] W. Boyd Dawkins, *Arch. Camb.* 1918, pp. 1 ff. The hoard, now in the National Museum of Wales, is the only one recorded from Wales. For English hoards, see R. A. Smith as cited.

[2] Roy. Com. Anc. Mons., *Denb. Inventory*, 565 A.

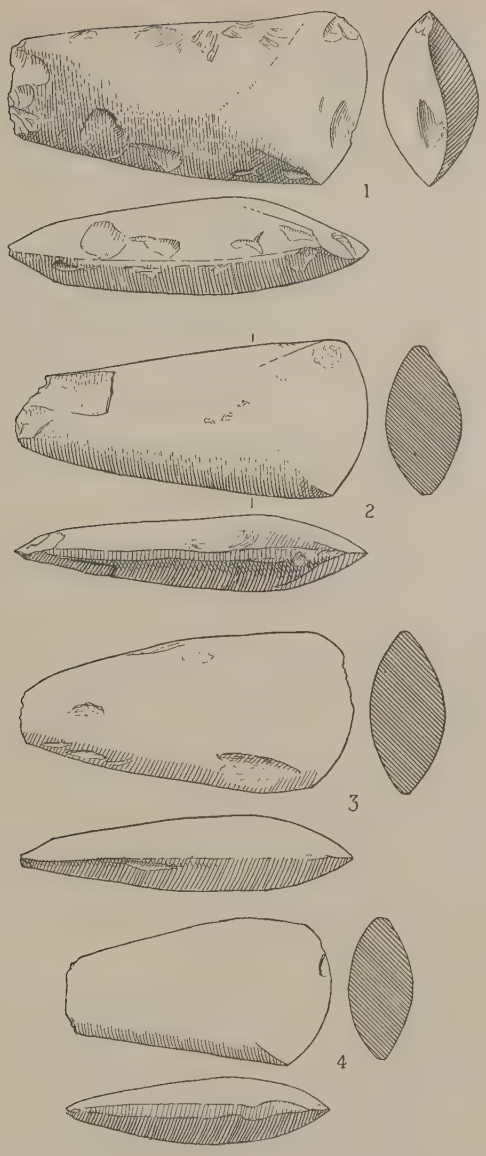

Fig. 15. Hoard of axes found near Crickhowell, Breconshire: 1 of flint, 2–4 of argillite. ($\frac{1}{3}$)

semicircular cutting-edge, chipped and partly rubbed down but not polished, from Llandeilo Fawr, Carmarthenshire; and a damaged axe with oblong section and nearly straight cutting-edge, from the Maindu Camp, Newport, Monmouthshire.[1] This last specimen is a pure Scandinavian form which did not become naturalized in Britain, and must be

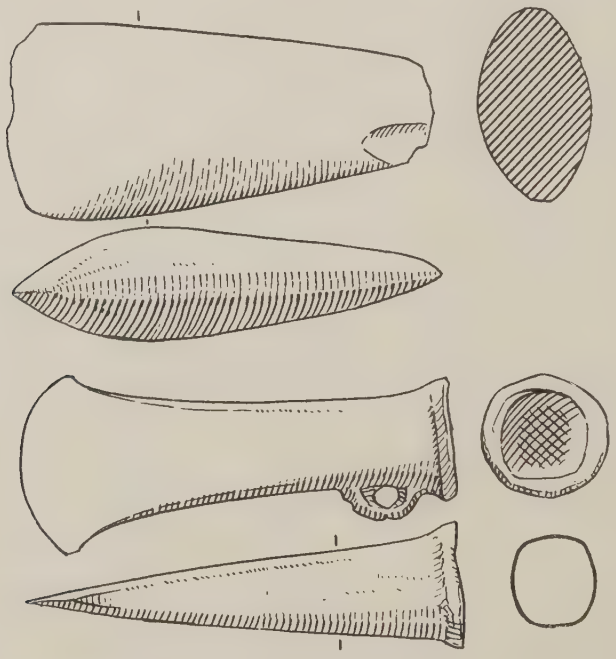

Fig. 16. Stone and bronze axes said to have been found together at Llansilin, Denb. (½)

attributed to (direct or indirect) influence from the Baltic not earlier than the extreme end of the British neolithic era. To the same period and origin must be ascribed a very interesting flint chisel from Brownslade, Pembrokeshire, now in the Carmarthen Museum (Fig. 19). The discovery of definitely Scandinavian types so far west is difficult to explain, but seems quite certain. To a similarly late phase,

[1] *Arch. Camb.* 1909, p. 372.

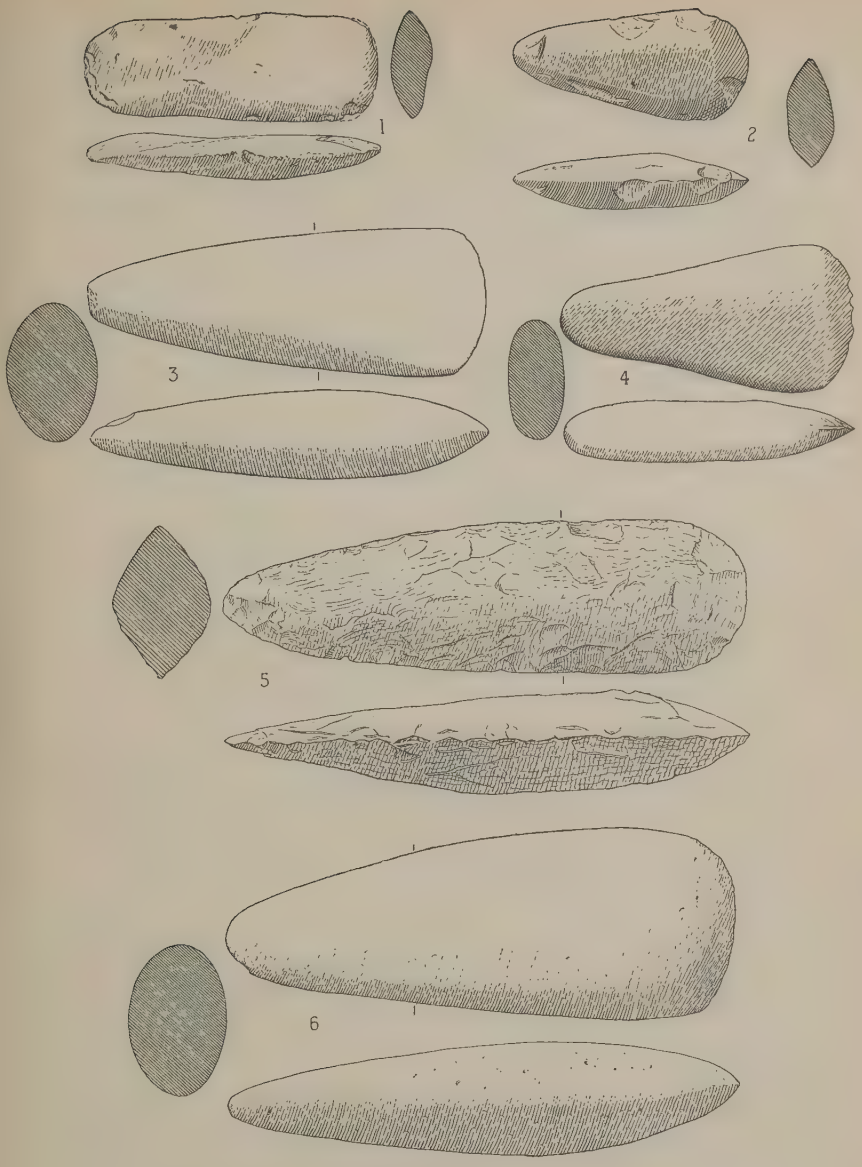

Fig. 17. Flint and stone axes. $(\frac{1}{4})$

1 Menai Bridge, Carn. (Graig Lwyd stone). 2 Dale, Pemb. (flint). 3 Celmi, Llanegryn, Mer. 4 Dale, Pemb. (sharpened sandstone pebble). 5 Llandeilo Fawr, Carm. 6 'Found under the Cromlech Fynnondruidion, Fishguard, Pemb.' (note by E. Laws).

though to a more local source, may perhaps be assigned a small axe from Strata Florida, Cardiganshire (Fig. 22). The slightly expanded edge suggests the reaction of metallic forms, and it is possible therefore that this specimen is as late as the beginning of the Bronze Age.[1] Its material is diabase from St. David's Head, some seventy miles from its find-spot. Finally, Fig. 17, No. 4 illustrates a water-worn pebble of sandstone which was picked up by some prehistoric inhabitant of the Pembrokeshire cliffs near Dale and,

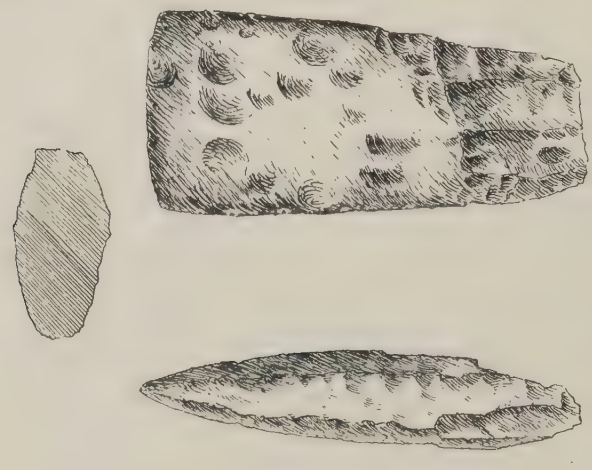

Fig. 18. Stone axe from Maindu, Newport, Mon.

with the addition merely of a ground edge, formed a cheap though not very durable substitute for the handiwork of man.

It is likely enough that some of the so-called axes were actually used as adzes, but implements more distinctly of this type may be recognized in Fig. 20, a polished chert specimen from Carnarvon, and a stone specimen from Brownslade, Pembrokeshire, and probably in Fig. 21, found in the bed of a dry channel cut in peat containing oak and birch near the summit of the Gader Mountain (over 2,000 ft.) in Breconshire between Crickhowell and Llanthony. This

[1] *Arch. Camb.* 1921, p. 6.

last specimen is worked from a flake of Wiltshire mesozoic chert, from the neighbourhood of Swindon or Devizes or, more probably, from the Vale of Wardour; like the flint axe and the large flint knives of Beaker period (below, p. 130) found also in southern Breconshire, it is thus an instructive link between Wales and southern England. In type it may be compared with some of the flake-adzes which occur in the complex series from the Graig Lwyd 'factory'.[1]

Axes and adzes must generally in Britain have taken the place of the hollowed chisels or gouges which, though very rare in this country, are numerous in Scandinavia, Germany,

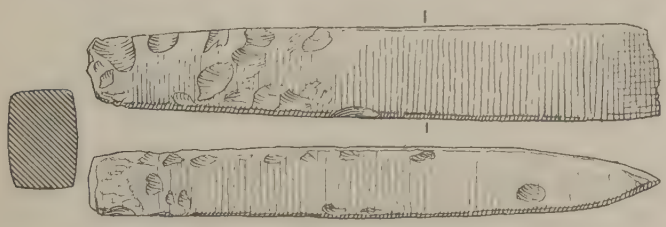

Fig. 19. Flint chisel from Brownslade, Pemb. (½)

and Russia. Two well-developed examples, however, the larger of diabase and the smaller of an indurated slate, both from the Wynne Collection at Peniarth, Merioneth, were almost certainly found locally or at least in North Wales (Fig. 22). They must, directly or indirectly, represent influence from the opposite shores of the North Sea, and it is very unfortunate that their find-spot is unrecorded. Fig. 20, No. 3, a rough slate adze from Machynlleth, Montgomeryshire, though not hollowed, has more kinship with these than with the series considered in the previous paragraph.

The smaller implements which are found throughout the Principality, and may be classified loosely as 'neolithic' (although sometimes of very much later date), are here represented by a typical series from Merthyr Mawr Warren.

[1] e. g. *Arch. Camb.* 1922, p. 24; and above, Fig. 12, No. 112.

near Porthcawl, Glamorgan (Fig. 24). Here the shifting dunes cover a broad strip of shore which was occupied intensively at various periods from neolithic times until its final submergence beneath the sand during the Middle Ages. When stripped by gales, the land-surface yields innumerable flint

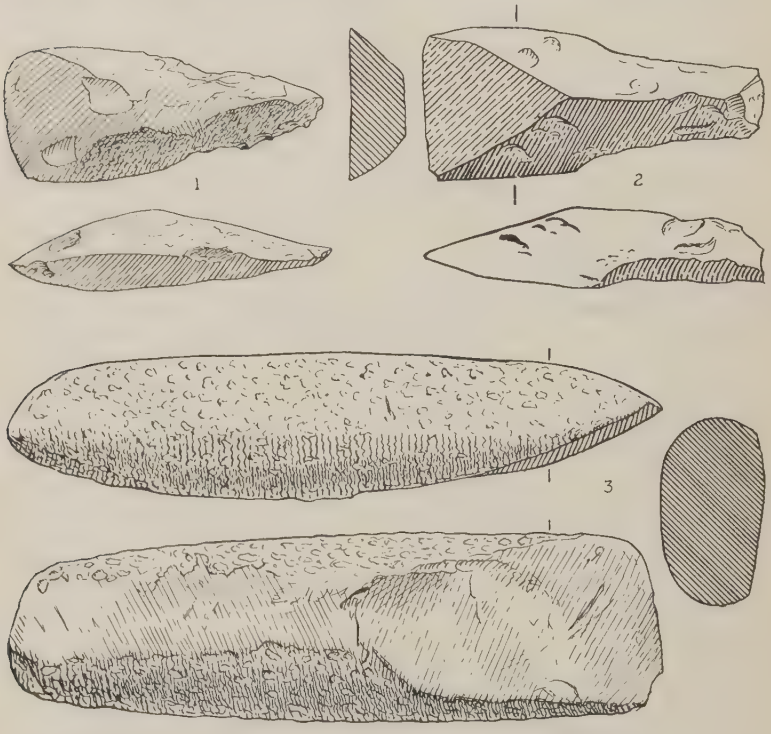

Fig. 20. Adzes: 1 Brownslade Burrows, Castlemartin, Pemb. 2 Carnarvon. 3 Machynlleth, Mont. ($\frac{1}{2}$)

flakes and nuclei, arrowheads (leaf-shaped and barbed and tanged), knives, end-scrapers, side-scrapers, circular scrapers, hollow scrapers, fragments of polished axes, borers, and general evidence of flint and stone working which rivals that of the Pembrokeshire cliffs in quantity and surpasses it in quality. Similar evidence on a smaller scale has been found in the neighbourhood of Dyserth and Gwaenysgor in North

Wales;[1] and it is clear that the coastal regions, which offered a ready supply of beach flints and were at the same time kept free from excessive vegetation by the sea-winds, attracted a considerable population in the later and perhaps also in the earlier part of the New Stone Age.

It is convenient here to notice certain stone implements of uncertain and perhaps various dates. In a later chapter

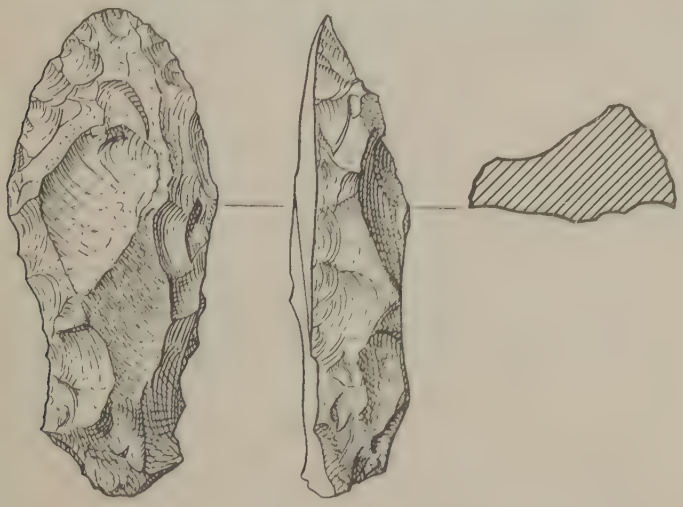

Fig. 21. Adze of Wiltshire chert found on the Gader Mountain, Breconshire. (½)

reference is made to an elaborately worked 'mace-head' from Corwen (see below, p. 138). Holed stones of very much simpler types are fairly numerous in Wales (as elsewhere), and have sometimes been dignified likewise with the name of 'mace-head'. The piercing of these stones is characteristically of hour-glass form, i. e. it has been drilled from both sides of the stone, and examples are found in which the drilling is incomplete, or misjudged in such a way that the two drillings fail to meet accurately.[2] The stones vary

[1] T. A. Glenn, *Arch. Camb.* 1913, p. 181; 1914, p. 247; 1915, p. 47.

[2] e. g. from Moel Trigarn, *Arch. Camb.* 1900, p. 208.

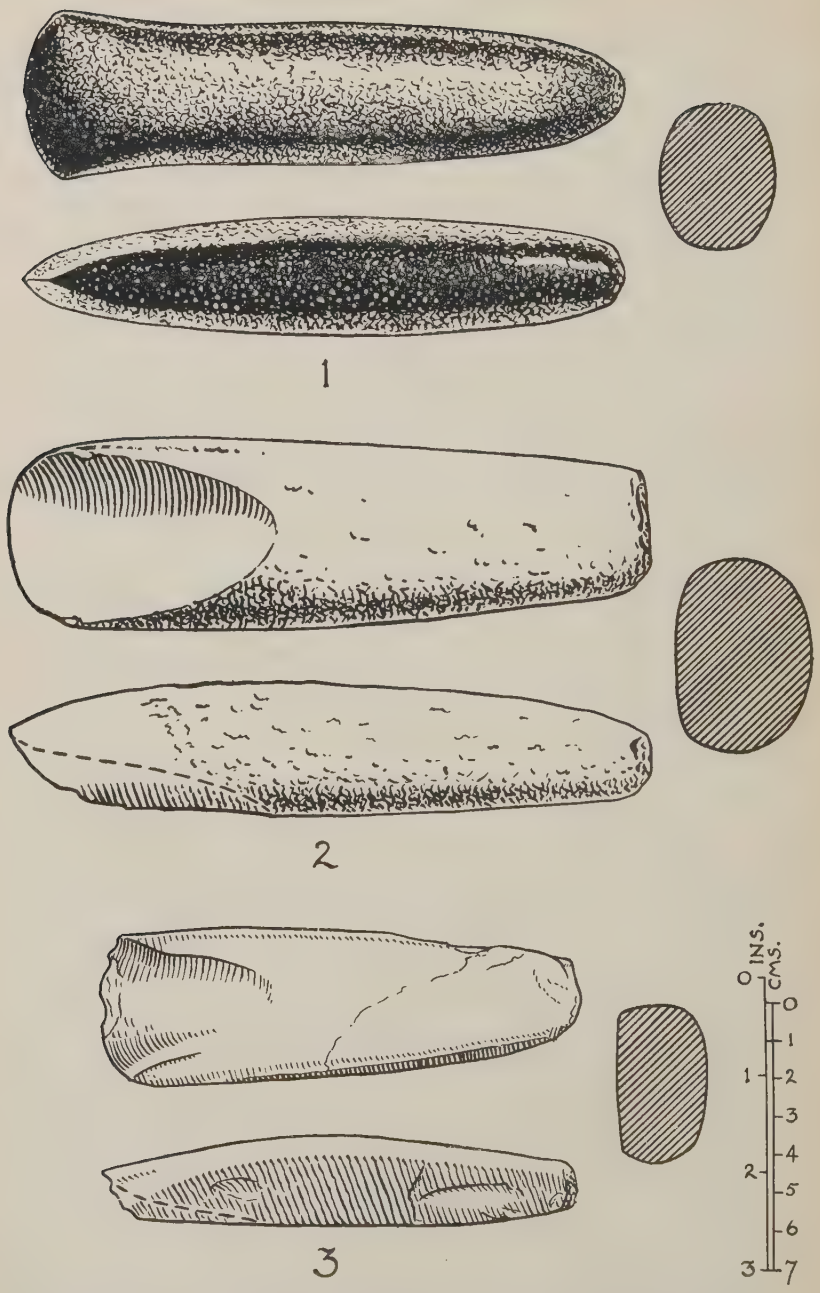

Fig. 22. 1 Stone axe from Bwlchyddwyallt, near Strata Florida, Card. 2 and 3 stone gouges probably from Merioneth

in average diameter from 2 or 3 in. to as much as 1 ft., and are either rounded or left in the rough. They very rarely show signs of abrasion, and cannot normally therefore have been used as maces or hammers; indeed in many cases the piercing would be quite inadequate for an effective haft. They are often called net-sinkers, and such in some cases may well have been their use. Other suggestions are that they were used to smooth arrow- or spear-shafts, or as missiles for hurling from a stick or thong, or again as weights for digging-sticks. More or less approximate analogies from

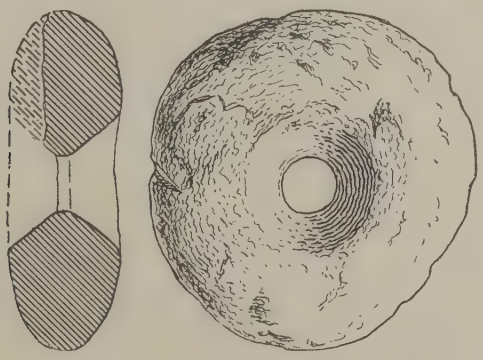

Fig. 23. Holed stone from Holyhead Mountain, Anglesey. (½)

various parts of the world can be cited in favour of each of these suggestions, and we can only conclude that they may all be true. The date of these implements is equally uncertain. Some may be neolithic, others, such as examples from the camp of Moel Trigarn in Pembrokeshire and from Din Silwy in Anglesey (Fig. 23), may be as late as the Early Iron Age or even the Roman period.

Amongst the implements of flint and stone found in considerable quantities with rough potsherds on what seems to have been a levelled occupation-site, known as 'King Charles's Bowling Green', on the summit of Bryn Llwyn (above 600 ft.), near Gwaenysyor, Flintshire, were a number of stones which had been roughly hollowed by hammer

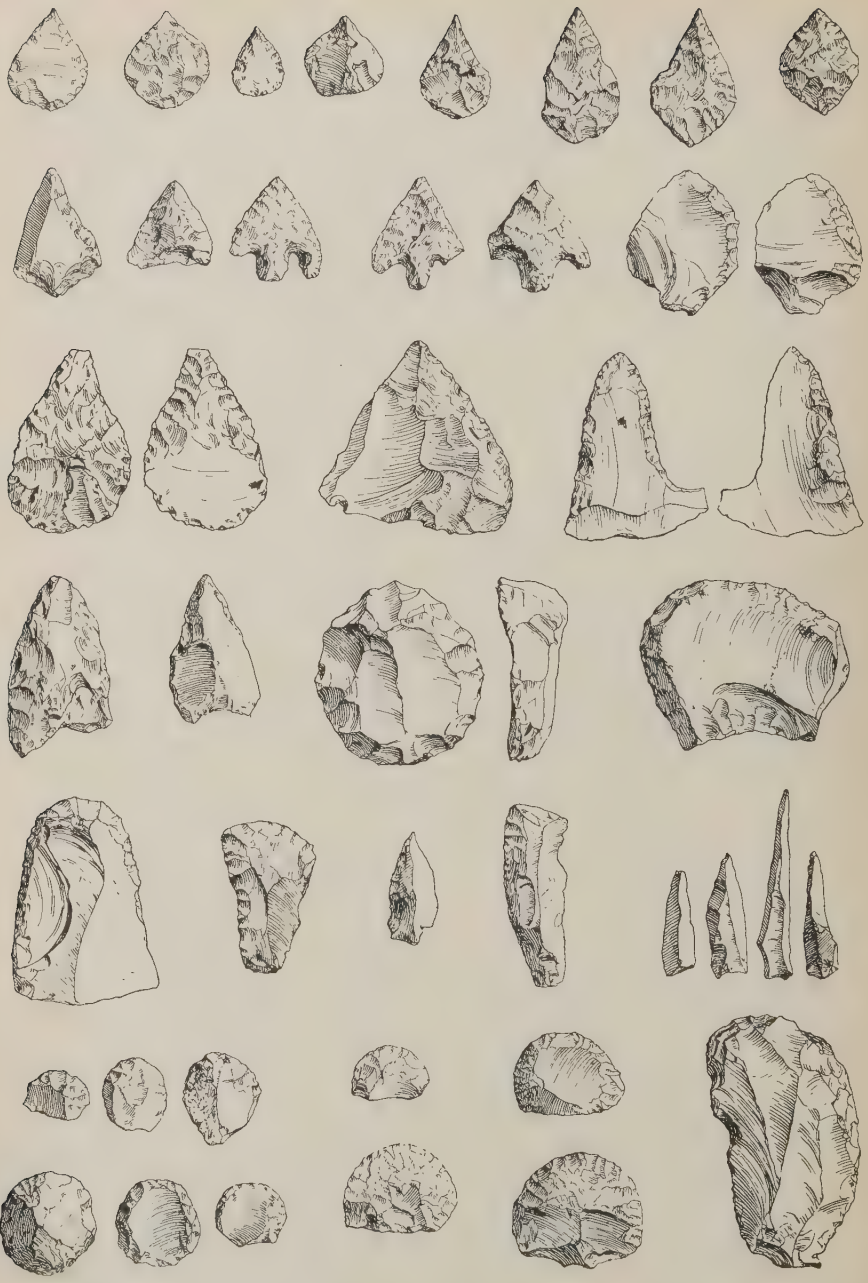

Fig. 24. Flint arrowheads, knives, scrapers, &c., from Merthyr Mawr Warren, Glamorgan. ($\frac{2}{3}$)

blows (Fig. 25).[1] These ' anvil-stones ' may have been used, in conjunction with hammer-stones, in the working of flint or stone. They occur in Ireland and in East Anglia, but do not appear to have been noticed elsewhere in Wales.

The Bryn Llwyn site brings us to the final question : Where did neolithic man live in Wales ? We shall see in the next chapter where in some cases he was buried, and sites such as Graig Lwyd and the Pembrokeshire cliffs show us

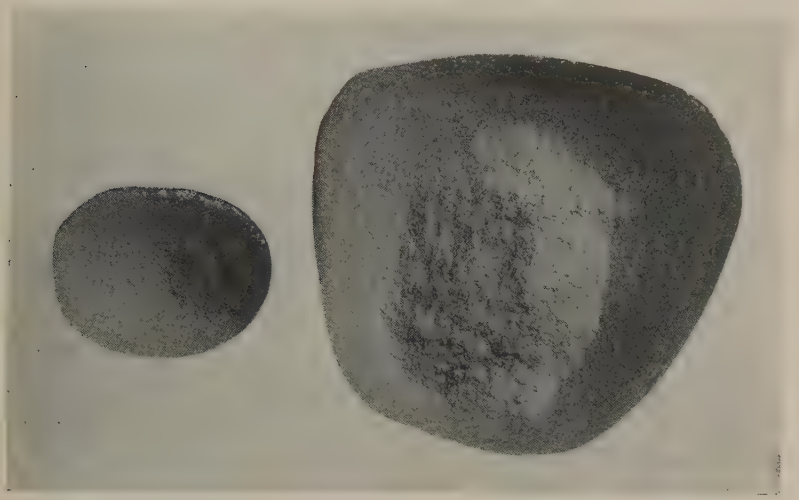

Fig. 25. ' Anvil-stone ' from Graig Arthur, Newmarket, Flints.

where he worked. But definite evidence of domestic occupation is difficult to find. Neither animal bones nor neolithic pottery have been found on any of the Pembrokeshire ' chipping-floors ', and the two hearths at Graig Lwyd are wholly incommensurate with the extent of the ' factory ' and cannot represent the permanent habitations of the neolithic axe-makers. The neighbouring hut-circles have been shown by excavation to be no earlier than the Iron Age, perhaps as late as the historic era. On the other hand,

[1] T. A. Glenn, *Arch. Camb.* 1914, p. 263. See also discussion of similar stones from other sites by G. S. Graham-Smith, *Proc. Prehistoric Soc. of East Anglia*, iii, pt. i (1919), pp. 33 ff.

the exposed site on Bryn Llwyn itself, with its indeterminate banks and scarps and, above all, with the few very rough nondescript fragments of pottery which have been found there alongside leaf-shaped flint arrowheads, broken polished axes, and other implements, may have supported a more permanent and intensive occupation in the latter part of the Stone Age. Again, on the prolific Pembrokeshire coast have been noticed shell-mounds which may in some cases be neolithic, though in other cases Bronze-Age or even medieval relics have been found in them ;[1] whilst in various parts, especially of South Wales, as elsewhere in Britain and notably in Ireland, have been found large numbers of so-called ' prehistoric hearths ' of equally uncertain and perhaps various dates.[2] These mounds or ' hearths ' are normally found beside streams. They range in diameter from 6 ft. to 50 ft., and in height rarely exceed 3 ft. ' A typical hearth consists of a heap of burnt and broken stones, of the size and appearance of ordinary road-metal, mixed with fine soil and charcoal dust.' Exceptional examples both in Wales and in Ireland are of horse-shoe shape.[3] They rarely yield either bones or implements, but flint flakes were found in two at Swanlake, Pembrokeshire, and, with minute fragments of apparently hand-made pottery, in a similar mound on the banks of a stream close to Radyr railway-station, near Cardiff. Another hearth at Burry Holm in Gower is said to have yielded Samian pottery.

For the most part, therefore, we may visualize the neolithic population of Wales as nomadic or at least unsettled, pivoting locally upon sites where flint and suitable stone were accessible and conveniently worked. Hearths beside springs and streams, and the debris of the ' chipping-floors ' or ' factories ', would naturally under such conditions be the most durable relics of habitation. The actual dwellings like the rough huts described by Giraldus Cambrensis in the

[1] *Arch. Camb.* 1913, pp. 410 ff.

[2] *Ib.*, 1906, pp. 17 ff. ; 1909, pp. 243 ff. ; 1911, pp. 433 ff.

[3] *Ib.*, 1913, p. 201 (Anglesey). Also *Journ. Roy. Hib. Acad.*, 4th series, vii (1885–6), p. 390.

twelfth century as built 'of the boughs of trees twisted together, sufficient only to last through the year',[1] would vanish as completely as do the ephemeral villages of the Congo at the present day.[2] Nor can we at present say that any one of the innumerable 'camps' and 'hill-forts' of Wales was built before the Age of Iron. Here speculation is idle in the almost complete absence of scientific exploration.

[1] *Descrip. Kamb.* i. 17.
[2] See *Cymmrodorion Soc. Trans.* 1920–1, p. 72.

III

MEGALITHS

The rough stone monuments of Wales—'maenhirs', 'cromlechs', stone-circles—have emerged slowly and recently from the golden mist of legend and folk-custom and from the less attractive fog of antiquarian speculation which had gathered round them. They are now recognized as one important group of a large family of similar structures distributed, under certain distinctive geographical conditions, from Ireland to India and Japan. Except in a few districts, our knowledge of them is, in detail, very incomplete; but it is abundantly clear that we are faced with the alluring problem of an almost world-wide circulation of certain closely related ideas which, however modified by diverse local influences, undoubtedly sprang, at some unknown time and in some unknown place, from a single seed. Even more vividly than the Roman forts or the medieval monasteries, these gaunt stones which bestrew the coastal counties of Wales link up a past culture of the remote peninsula with the main currents of a European or even world-wide civilization.

The monuments in question consist of (*a*) chambered tombs, certain forms of which are known as *dolmens* or (in Wales) *cromlechau* or *cromlechs*; (*b*) *maenhirs* or standing-stones, usually isolated but occasionally arranged in rows or *avenues*; and (*c*) stone-circles, sometimes (especially in France) known as *cromlechs*. We will glance at each of these three groups in turn.

Chambered Tombs

At the outset we are confronted with difficulties of terminology. The term *dolmen* (table-stone) is used by scientific writers in most countries to indicate a structure

consisting of three or more upright stones supporting a horizontal cover-slab. The word was borrowed from the Low Breton first by Coret, the author of a French work on 'Gallic Origins' published in 1796. In Wales, however, the general name for this type of monument has been *cromlech* since Henry Owen used the word in this sense in his *Pembrokeshire* (i. 251), in 1603. Except that *dolmen* is certainly, and *cromlech* doubtfully, a name of folk-origin, neither term has any special intrinsic merit, but since *cromlech* (= curve-stone) is used in France and elsewhere to indicate stone-circles, confusion will be avoided by discarding it, and by using the unambiguous word *dolmen* for the table-stones.

Dolmens are now known to have been burial-chambers, but until recently their former use was disputed or misunderstood, and the name 'Druid's altar' which still appears occasionally on our maps is an inheritance from the eighteenth- and nineteenth-century antiquaries. Local lore has clustered thickly around these mysterious monuments, and only a few representative examples of popular legend or custom can here be cited. Thus, in the parish of Cerrig y Drudion, in Denbighshire, stood before 1781 a dolmen called 'Carchar Cynwrig ruth' or 'the prison-cell of Cynwrig of the wide mouth'. This personage, according to the tradition related by Pennant, was 'a little tyrant' who 'was wont to cram those who offended him into the hollow of these stones'. Rhŷs adds that Cynwrig Ruth or Cynric Rwth 'was a sort of she-Polyphemus, who delighted to feed on babies' flesh; she is called Cynrig Bwt at Llanberis, and had her abode under a huge natural stone called Y Cromlech, near the way to the Llanberis Pass'.[1] Other dolmens, especially in South Wales, are known as the *stone* or *kennel of the greyhound bitch* (e. g. St. Lythan's and Llanedern, Glamorgan; Ffynnon Newydd, Carmarthenshire), or the *stone of the she-wolf*, and the like, and many of these names coincide significantly with the line of country traversed by

[1] Pennant's *Tours in Wales*, ed. Rhŷs, ii. 211; Roy. Com. Anc. Mons., *Denbighshire Inventory*, 98.

King Arthur in his legendary hunt of the Twrch Trwyth.[1] Of individual legends, one of the most intriguing is that which is said to attach to the Tinkinswood dolmen at St. Nicholas, Glamorgan. It is related that any one who slept within the dolmen on a ' spirit night ' would suffer one of three calamities: he would either die, or go raving mad, or become a poet.[2] The enormous capstone of Maen Cetti or Arthur's Stone in Gower takes the latter name from the story that King Arthur, walking one day in Carmarthenshire, felt a pebble in his shoe. Taking it out, he angrily flung it into the air, so that it fell in Gower, where it was afterwards used as part of the famous dolmen. The stone has been calculated to weigh about twenty-five tons, and a fragment, weighing an additional ten tons, has at some time been broken off it. This happened when St. David, to confound the superstitions of those who still persisted in worshipping the stone, split it with a blow of his sword. Superstitious practices relating to it, however, survived as late as the nineteenth century; for ' honey-cakes were offered upon it for good luck, and at certain periods of the moon the credulous crawled round it on their hands and feet in the hopes of seeing a lover, or for some equally silly reason '.[3]

If we turn to the actual remains, it soon becomes apparent that the dolmens, themselves far from uniform in character, merge into and must be considered with other types of chambered tombs. Regarded merely as a burial-chamber, the dolmen falls into place in a complex of types united only by the common possession of certain general features. The principal of these features is *accessibility from without*, i. e. the tomb was in the nature of a tribal or family burial-vault, and thus had a permanent entrance for the insertion of successive burials. A secondary feature in common is the

[1] See T. Stephens, ' On the Names of Cromlechau ', *Arch. Camb.* 1856, p. 99.

[2] This and other folk-stories (sometimes to be taken *cum grano salis*) will be found in M. Trevelyan, *Folk-Lore and Folk-Stories of Wales*; and in J. Ward, *Arch. Camb.* 1916, pp. 263 ff.

[3] Sir Gardner Wilkinson, *Arch. Camb.* 1870; J. Fisher, *ib.*, 1920, pp. 330 ff.

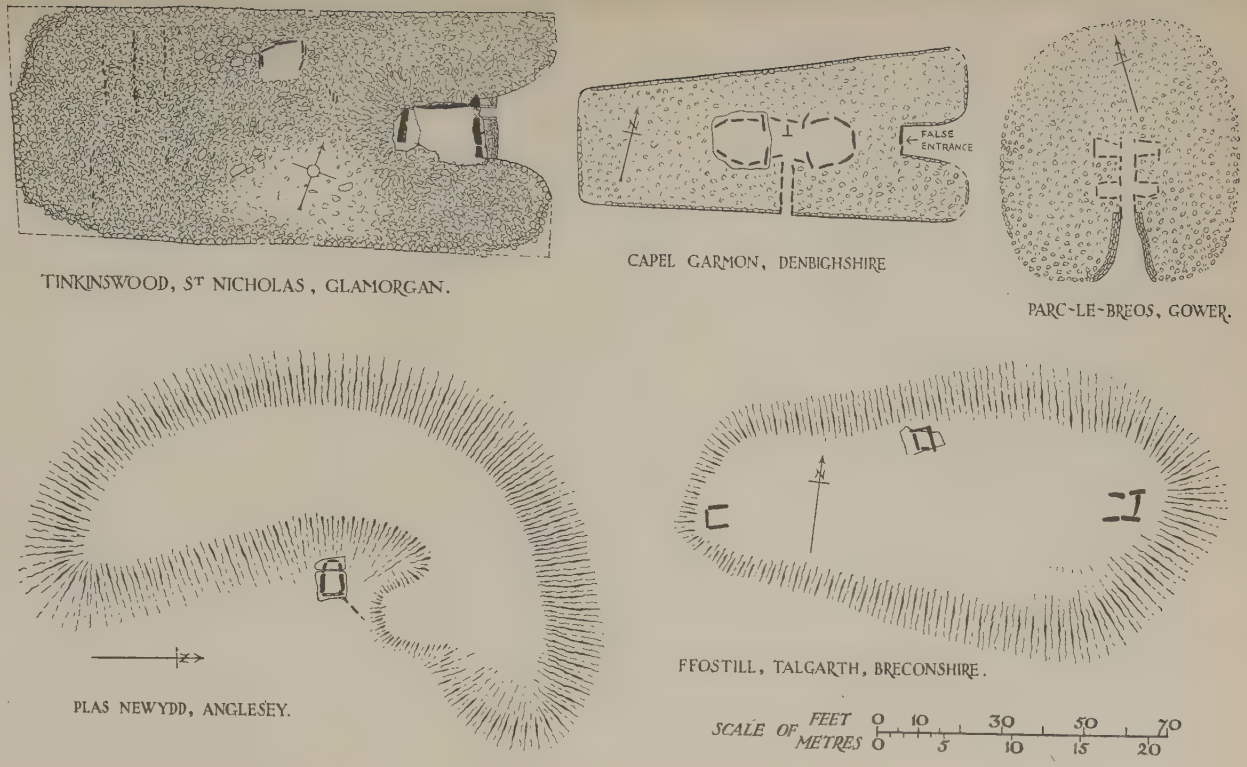

Fig. 26. Chambered tombs

presence of a covering mound or cairn, interrupted at the entrance to the tomb or its approach. Whether this mound was invariably present in the British examples is not beyond dispute, but it certainly exists or has existed in a majority of cases. It is occasionally circular, but is normally of elongated form—oval, egg-shaped, or oblong—and is therefore known as a ' long-barrow ' or ' long-cairn ' (according as it is built of earth or of stones) in contradistinction to the round-barrows characteristic of later periods. Dolmens are thus in some, if not all, cases merely the surviving member of a former long-barrow or cairn, and must be discussed, in conjunction with collateral and derivative types of tomb-chamber, under a more general heading than that either of ' dolmen ' or of ' megalithic structure '. The phrase ' chambered tomb ' is here adopted as a comprehensive and non-committal generic term.

Before discussing the relative significance of the various types of chambered tomb, we will proceed to examine briefly some of the more striking or characteristic examples in Wales. Few of them have been explored with any approach to scientific method, and it must be remembered throughout that, imposing though some of the remains still be, they nevertheless survive merely as time-worn fragments. Our knowledge of them therefore, both direct and indirect, must be continually (though without undue bias) supplemented from better preserved analogies elsewhere.

The well-known chambered tomb in *Tinkinswood*, near St. Nicholas, Glamorgan, is one of the largest and best preserved in the kingdom (Figs. 26–8).[1] The capstone measures upwards of 22 ft. by 15 ft. with a maximum thickness of 3⅜ ft. and is supported at a height of from 5 to 6 ft. by five (originally six or seven) upright stones forming a roughly rectangular compartment. In the eastern side an entrance-gap 2⅜ ft. wide was discovered during excavations in 1914. It is flanked by flat slabs beyond which on each side the main upright stones of the chamber are faced by roughly coursed rubble-walling. In front of the entrance lay the original door slab, a roughly oblong stone 3 ft. high and 2⅜ ft. broad.

[1] J. Ward and Sir Arthur Keith, *Arch. Camb.* 1915, pp. 253–320, and 1916, pp. 239–94.

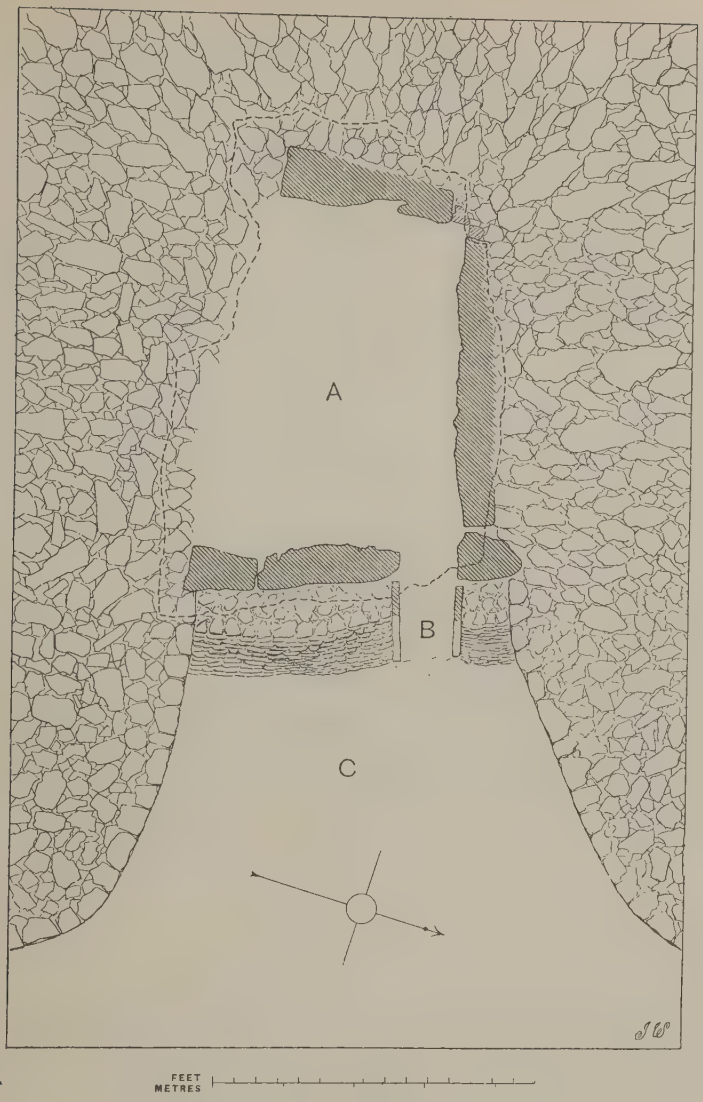

Fig. 27. St. Nicholas chambered tomb

A, principal chamber with capstone over. *B*, entrance.
C, fore-court

The chamber is recessed within the eastern end of a rectangular cairn 130 ft. from east to west and average breadth of 57 ft.; so far as preserved, the maximum height is about 3½ ft. The cairn is revetted by rubble walling similar to that flanking the entrance to the chamber, and at intervals within the structure of the mound were discovered intermittent lines of upright slabs the purpose of which is not clear. A little north of the centre of the mound is a small and roughly rectangular open pit, the sides of which are faced with rubble. The purpose of this pit is also uncertain; it contained nothing but a few animal bones 'apparently oxen and sheep'. It may have served as a secondary burial-chamber or possibly as a repository for the remains of ceremonial funeral-feasts.

The objects found during the excavations include a few pieces of Roman pottery, part of two iron implements possibly of the same period, a number of small fragments of coarse pottery of the type usually associated with the Bronze Age, and four comparatively thin sherds with bright polished reddish-buff surface ornamented alternately with three horizontal and three zigzag lines impressed by means of a notched stamp. The fineness of this ware suggests a date not later than the Beaker period (early Bronze Age) and the sherds may indeed actually be those of a beaker. The fragments were found in the lowest stratum within and immediately without the chamber, and since this stratum contained almost all the human bones it clearly accumulated during the period in which the chamber was used for its intended purpose. Seven pieces of worked flint were found of which one, apparently part of a thin leaf-shaped lance head with retouched edges, lay on the original surface beneath the cairn, and possibly, therefore, antedates it.

The human bones were found in three areas: (1) in a stratum about 2 ft. in depth covering the floor of the chamber; (2) in the material which blocked the approach-passage; (3) amongst the debris of the tumulus at the south side of the chamber—'which side had been apparently broken open at some former period'. The bones were very fragmentary, but represented at least fifty individuals ranging in age from a few months to 70 years. Four crania have been reconstructed sufficiently to indicate that they were dolichocephalic in type, in one case with a cephalic index between 70 and 74. The supra-orbital ridges are well developed and resemble those of other dolichocephalic skulls found in British long-barrows. The thigh bones indicate a small or moderate height and are flattened (platycnemic) in consequence perhaps of the adoption of a squatting posture when at rest.

Animal bones were found, as already mentioned, in the secondary chamber, but principally in the main chamber and

its approach. They include horse, *Bos longifrons*, *Bos primigenius*, sheep and goat, pig and various small animals. Several bones of the larger animals were found in association with the human bones, and seemed to have been introduced more or less contemporaneously, possibly in connexion with funeral-feasts or offerings.

Generally, it may be said that the evidence furnished by the excavation of this tumulus supports the supposition that it was

Fig. 28. St. Nicholas chambered tomb : entrance

(The herring-bone walling is a restoration ; the remainder is original.)

built possibly before, but almost certainly not after, the Beaker period, and that it was used by peoples of a type frequently though not exclusively found in association with neolithic remains in this country.

In Monmouthshire, at *Heston Brake* near Portskewett, a ruined passage-tomb was excavated in 1888.[1] It consists of the indeterminate remains of the mound, and of two chambers, or a chamber and an entrance-passage (Fig. 29), the latter opening towards the east between two large stones considerably taller than

[1] M. E. Bagnall-Oakley, *Rough Stone Monuments in Monmouthshire*, p. 18.

the others; one is broken, but the other is still 6 ft. high. The eastern chamber or passage is 13 ft. long and 5 ft. 2 in. wide. Within its south-western corner were human teeth and finger-bones, together with some bones of ox. The western chamber, practically a prolongation of the eastern, is 9 ft. long and 4 ft. 10 in. wide, and also contained fragmentary human bones. Two of the upright stones of this chamber, on the north and south sides respectively, have holes, of which the latter was thought to have been made or enlarged artificially. Such holes sometimes occur in megalithic chambers generally in the entrance slab, but occasionally in one of the side slabs, as in an example in Syria.[1]

The *Parc Cwm* cairn, at Parc-le-Breos, Gower, is one of the most completely preserved passage-tombs known in Wales (Fig. 26). It was excavated by Lord Avebury in 1869,[2] and is still much as it was left by the excavator. The cairn, as visible, is of roughly circular or kidney-shape with its longer axis north and south and 60 ft. in length, its shorter axis about 10 ft. less. The maximum height when first noticed was about 5 ft. The entrance faces slightly west of south and is inset to a depth of 16 ft.; the recess narrows from a breadth of 12 ft. at the entrance to that of $3\frac{1}{2}$ ft. at the inner end, and its sides are revetted by battered walls built up of small, flat stones. The approach affords access to a gallery 17 ft. long and 3 ft. wide with sides formed of large upright stones supplemented by rubble in the interstices. On each side the passage opens into recesses or transepts similarly built, and approached, in at least one instance, over a sill-stone. No covering slabs were preserved. The passage and transepts contained fragmentary remains of at least four individuals together with teeth of pig and probably deer, and a few small potsherds of which nothing is known. The unusual thickness of some of the fragments of human skulls was specially noted.

Not far from Parc-le-Breos, another passage-grave was partly disinterred in 1893 from the drifting sands of *Penmaen Burrows* (Fig. 29).[3] Its original extent is uncertain, but it appears to have been approached from the east through a passage 8 ft. long, 3 ft. high, and upwards of 3 ft. wide. This opened into a chamber about 12 ft. long and largely covered by a capstone calculated to weigh about 7 tons; and to the south of this chamber was a transept $8\frac{1}{2}$ ft. long, $3\frac{1}{2}$ ft. high, and 5 ft. wide. There were possible indications of a similar transept on the north side. In the south transept were found many animal bones, together with part of a human jaw, and elsewhere in the same chamber were more

[1] Montelius, *Des Orient und Europa*, Fig. 210.
[2] *Ethnographical Soc. Journ.* 1871; *Arch. Camb.* 1871, pp. 168 ff.
[3] Col. W. Ll. Morgan, *Arch. Camb.* 1894, pp. 1 ff.

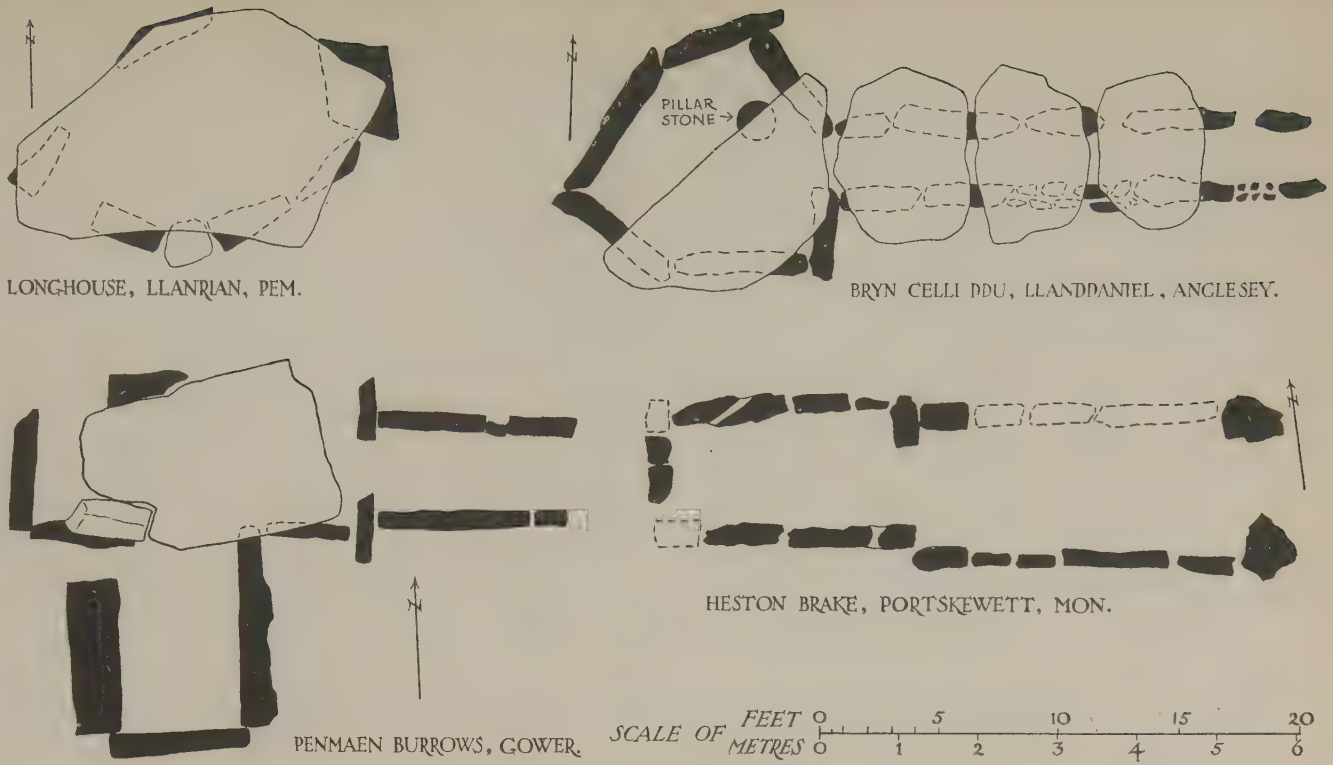
N
PILLAR STONE
LONGHOUSE, LLANRIAN, PEM.
BRYN CELLI DDU, LLANDDANIEL, ANGLESEY.
PENMAEN BURROWS, GOWER.
HESTON BRAKE, PORTSKEWETT, MON.
SCALE OF FEET 0 5 10 15 20
METRES 0 1 2 3 4 5 6

Fig. 29. Chambered tombs

human bones. Other discoveries included ' three small pieces of brown pottery, quite smooth on one side, and rough on the other. What they are we did not know.' Such is the grist that too often comes to the mill of archaeology ! The construction of the tomb is of large stones (one of the uprights flanking the passage is $6\frac{1}{2}$ ft. long) with traces of a filling of small stones between the blocks.

Anglesey is rich in megalithic remains which have been described with unusual completeness.[1] Several of the chambered tombs seem to have been of the passage-grave type—i. e. a long gallery or passage of approximately equal width throughout, as distinct from the simple compartment of the ordinary dolmen-type ; and it is likely enough that some of the dolmens are really the surviving remnants of former passage-graves. Though much robbed within the last two centuries, the remains at *Bryn Celli Ddu* in the parish of Llanddaniel are still amongst the most striking of their kind in the kingdom. They consist of the fragmentary remains of a cairn, together with a polygonal chamber approached from the north-east by a passage 3 ft. wide, about 4 ft. 6 in. high, and nearly 20 ft. long (Fig. 29). Between the upright stones of the structure are remains of rubble filling. The whole was originally covered by slabs, of which several remain, and still carry fragments of the earthen mound which must once have covered the whole monument. Within the chamber is a central monolith 6 ft. high, now fallen, and old descriptions speak of a ' stone bench ' round the sides. On the ' bench ' are said to have been crumbling human bones. Another description mentions a second monolith or pillar and a small side-cist or small chamber, both formerly near the entrance of the passage but now removed. In the cist are said to have been a few fragments of lead, some charcoal, a broken flint knife, a javelin head of flint, and some pieces of human bones. There or elsewhere within the tomb were found a fragment of pottery, shells, and a piece of red colouring-matter, probably composed of ground haematite.

Analogies for a pillar or pillars within the tomb-chamber can be found in other megalithic areas, notably in south-east Spain where the rough corbel-vault of the chamber is sometimes supported by a central pillar of wood or stone. A corridor tomb at Antequera in Andalusia has a rectangular chamber roofed with four slabs beneath the junctions of which, along the central axis of the chamber, are three stone pillars.[2] These pillars, however,

[1] E. Neil Baynes, ' The Megalithic Remains of Anglesey ', *Cymmrodorion Society's Transactions*, 1910–11, pp. 3–91.

[2] Montelius, *Des Orient und Europa*, p. 53 ; T. Eric Peet, *Rough Stone Monuments*, p. 70 ; E. T. Leeds, ' The Dolmens and Megalithic Tombs of Spain and Portugal ', *Arch.* lxx. 210.

have no structural significance, a feature which they seem to have shared with that in the chamber at Bryn Celli Ddu, since this was dislodged by an intruder without interfering with the remaining cover stone. It may be noted further that the walls of some of the Spanish chambers bear traces of rough painting in red, and it is just possible that a similar custom may explain the presence of the piece of colouring-matter at Bryn Celli Ddu.

At *Plas Newydd*, near Llanedwen, is an oval mound or cairn with its long axis measuring rather more than 50 yds. from north

Fig. 30. Plas Newydd chambered tomb, Anglesey, showing openings in front slab

to south (Fig. 26). Recessed within the centre of the eastern side is a roughly rectangular megalithic chamber, 7 ft. 3 in. long and from 3 ft. to $4\frac{1}{2}$ ft. wide, with two large cover slabs. At least one other chamber seems to have been discovered, apparently in the southern end of the mound. The first exploration of the surviving chamber in 1754 was discontinued because ' it seemed to contain nothing but bones ' and subsequent spoliation revealed near the top of the cairn ' on one side about a yard deep in the stones, the bones of three persons lying close to one another, not at length in a straight line but in oblique posture, straggling with heads downwards '—presumably crouched burials.

The special feature of the existing chamber is the presence in

the entrance of a vertical sill with two semicircular depressions in its upper edge (Fig. 30). It is possible that these depressions are partly or wholly natural in origin, but this possibility does not militate against the supposition that the stone was deliberately chosen by reason of their presence. Whether, as has often been conjectured, a second stone, with corresponding depressions, was superimposed, after the manner of stocks, in order to complete two circular perforations is not known. If these suppositions be correct, the Plas Newydd chamber falls into line with others similarly provided with a hole or holes throughout the megalithic area from England to India. The significance of these holes will be discussed below.

Of the other chambered tombs in Anglesey the most imposing is that at *Trefignath* near Holyhead. It consists of the remains of a continuous covered passage 45 ft. long, 4 ft. wide, and 4 ft. high. The entrance faces south-east and is flanked by two large stones, 7 ft. above ground. The passage was formerly divided into three or more chambers by partitions consisting of flat upright stones and the monument wholly or partially covered by earth and stones. Within it are said to have been found urns and human bones of which nothing is known.

The *Capel Garmon* carnedd, near Llanrwst, Denbighshire, was explored in 1853, and again in 1924 (Fig. 26). It is an oblong cairn recessed at its eastern end and in outline similar to the Tinkinswood (St. Nicholas) tomb described above. There is, however, this striking difference between the two tombs, that the recess at Tinkinswood forms the approach to the actual entrance of the chamber, whereas at Capel Garmon the recess terminates in a *false door* formed by two or three slabs backed merely by the substance of the mound. Such false doors are occasionally found in chambered long-barrows, as at Rodmarton in Gloucestershire; the intent may have been to attract the attention of raiders, human or supernatural, from the real entrance which, at Capel Garmon, was a narrow passage in the centre of the south side of the mound. The passage is 15 ft. long and from 1 ft. 6 in. to 3 ft. broad, and at the north end is an oblong chamber, 16 ft. by 10 ft., partially subdivided by two stones in the centre, whilst on each side (east and west) are two larger chambers, roughly circular in plan. The western chamber retains its huge capstone, measuring 14 ft. 8 in. by 12 ft., but the other capstones have disappeared. The walls are of upright slabs, with smaller stones in the interstices.[1] In the passage were found a few small sherds

[1] *Arch. Camb.* 1856, p. 91; Roy. Com. Anc. Mons., *Denbighshire*, p. 508. For unpublished information regarding the false entrance and the potsherds I am indebted to Mr. W. J. Hemp, who directed the recent excavations carried out by H.M. Office of Works.

of fine pottery somewhat similar to the earliest ware at Tinkinswood and possibly of late neolithic date.

At *Tyddyn Bleiddyn*, near Cefn, Denbighshire, a long-cairn containing two passage-graves was excavated in 1869 and 1871.[1] The first was approached through the north-eastern end of the cairn by a passage 6 ft. long and 2 ft. wide. At the inner end of this passage, an entrance flanked by transverse slabs and partially closed by a third slab 18 in. high opened into a chamber 9 ft. long

Fig. 31. Dolmen with cup-marked capstone at Clynnog Fawr, Carn. (Ht. about 6 ft.)

and widening inwards to a maximum width of 5 ft. Both passage and chamber contained numerous human bones thought to have belonged to more than twelve individuals who had been buried at different times in a crouching posture. The only other object found was a slightly chipped flint pebble. One of the skulls was sufficiently reconstructed to show that it was of a normal long-barrow type, with cephalic index 76·5 and moderately pronounced supra-orbital ridges. The thigh bones showed a tendency towards the flattening due to a habitual squatting posture.

[1] W. Boyd Dawkins, *Cave Hunting*, pp. 161 ff.

The second chamber was entered from the north through a passage 10 ft. long and 2½ ft. in width. The chamber itself was of similar length and wedge-shaped with the greatest width (6 ft.) at the inner end. 'Both the chamber and the passage were full of human remains of all ages, buried in a contracted posture.' The chamber also contained the broken jaw of a roebuck, remains of goat, a broken flint, and round pebbles of quartz; and the passage yielded the teeth and bones of dog and pig.

Two dolmens in Wales are notable for the presence of small pittings or cup-marks on the upper surface of the cover slab. That at *Trellyffiant* near Nevern, Pembrokeshire, has about twenty-two shallow cup-marks, apparently artificial, with an average diameter of 3 in. At *Clynnog Fawr*, in Carnarvonshire, the capstone is literally pock-marked on its upper sides, and some of the pits or cups are joined by channels (Fig. 31). A similar connecting channel joins some of the cups on an isolated stone, known as Maen Cattwg, at Gellygaer in Glamorgan (Fig. 32), but is apparently absent from another of the very rare cup-marked stones of Wales, at Rhiwderin in Monmouthshire.[1] Cup-marks of these and sometimes more elaborate types are doubtless of religious significance, although their meaning is much disputed. The common view is that they were associated with some form of sun-worship; another theory, which has obtained less acceptance, is that they were 'soul-houses' or dwelling-places of spirits, based symbolically on the primitive round hut-plan. Montelius, in discussing similar pitted slabs, used in dolmens in Palestine, north Africa, Spain, France, Britain, Scandinavia, and elsewhere, points out the similarity of certain cup-marked stones used for holy water in the early Christian Church in certain parts of northern Europe, with the inference that the prehistoric examples may have served an analogous purpose. Occasionally, however, the cup-marks are found on the faces of the vertical slabs of megalithic monuments, and in such cases, if the cup-marks are contemporary with the monument, they obviously could not have been used in the manner suggested. It is a natural supposition that the cup-marks date from the period in which the dolmens themselves were erected and used, but beyond the sufficiently obvious fact that they had some symbolical or ritualistic significance, nothing further can be said with certainty about them.

The presence of cup-marks on the cover slabs of the two Welsh dolmens, as on others elsewhere in the megalithic area, presumably indicates that the mound or cairn which was probably present in these cases did not completely cover the top of the

[1] *Arch. Camb.* 1895, p. 233.

chamber. It is commonly supposed that dolmens, even without this special feature, in Scandinavia and elsewhere similarly projected in part above the enclosing mound and, though it is not easy to prove that such instances are not due to denudation of the mound, the cup-marked examples support the supposition. It is likely enough that the tops, at least, of the larger dolmens were never covered, although the smaller dolmens and chambers were probably always protected by a covering against spoliation or damage.

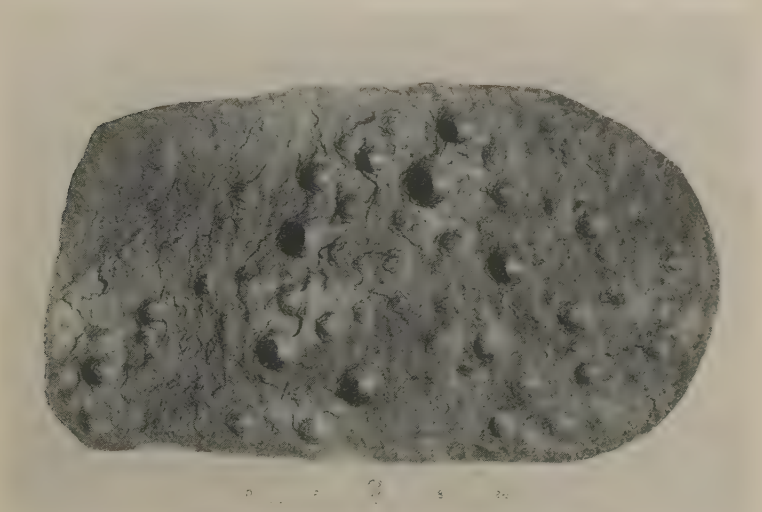

Fig. 32. Maen Cattwg cup-marked stone, Gellygaer, Glam. (From a cast)

Three long-cairns partially excavated during recent years in Breconshire are of special interest as representatives of a type apparently rare in Britain though well known in Scandinavia. The distinctive feature of these cairns is that they enclose megalithic cists, or chambers without entrance through the end or side of the mound. This type is recognized in Scandinavia as transitional between the passage-grave and the short cist characteristic of the Bronze Age. It differs from the latter in three respects : (1) it is longer and broader than the Bronze-Age cist grave ; (2) it commonly

contains several burials, inserted at intervals by removing the capstone or one of the capstones, whereas the Bronze-Age cist was normally prepared for the reception of a single body and was not re-used ; (3) the mound is sometimes elongated, whereas the Bronze-Age mound is invariably circular. These large cists, as will be seen, belong to the fourth or latest period of the Scandinavian classification, and seem to represent the survival, in a modified form, of the older megalithic culture in the midst of early Bronze-Age cultures of various and rapidly developing types. It is not easy to say, however, whether the long-cists were in the direct line of development between neolithic chambered-tomb and Bronze-Age short-cist ; or whether, as is more probable in north-western Europe, the long-cists were at least in part the result of the interaction of an intruding short-cist culture upon the indigenous megalithic types.

'The first of these cairns, at *Pen-y-Wyrlod*, ¾ mile east of Llanigon parish church, is egg-shaped and included at the larger (eastern) end a closed megalithic cist of the type described above, and at the west end a supplementary chamber containing charcoal. The principal chamber yielded fragmentary remains of at least twelve persons of both sexes, together with animal bones, two small potsherds, and some flint flakes. A few feet west of the chamber and some two feet below the present surface were found a number of blue glass beads and small tubes of vitreous paste, and the debris from the excavations contained a bronze coin of Crispus.[1]

'Two other cairns, on *Ffostill Farm* near Talgarth, are of generally similar shape and also contain supplementary chambers. One cairn is oriented 21 degrees east of north, is 108 ft. long, and 68 ft. wide at the more easterly end, which is both broader and higher than the other and contains a massive stone chamber (Fig. 26). This is an irregular oblong about 11 ft. by 4 ft. and the large upright slabs of which it is formed are from 5 ft. to 6½ ft. high. At the time of excavation it was still almost completely buried in the cairn. At a depth of 2 ft. to 3½ ft. the excavators found throughout the length of the chamber abundant human bones representing at least eight individuals, amongst them a small adult cranium of dolichocephalic type and a male frontal bone with strongly marked brow-ridges. With the bones

[1] C. E. Vulliamy, *Man*, 1922, p. 6; W. E. T. Morgan and G. Marshall, *Arch. Camb.* 1921, pp. 296–9.

were discovered three pieces of flint, "all showing signs of human workmanship, and one cracked by fire."[1]

These three cairns of transitional type are members of a well-defined group which skirts the Black Mountains of Breconshire both on the north (Wye Valley) and on the south (Usk Valley), and includes the connecting pass between Talgarth and Cwm-du on the west with an outlier near Llangorse Lake. The group consists of a chambered tomb at Dorstone in Herefordshire, two near Pipton two and a half miles north of Talgarth, the examples at Llanigon and Talgarth (Ffostill), one on the southern slope of Mynydd Troed and two on the opposite side of the pass some three miles south of Talgarth, one known as Tŷ Illtyd west of Llangorse Lake, and one or perhaps two at Crickhowell. The same area has yielded at least two beaker-burials which are probably but little later in date, and at Ffostill the two long-cairns are closely associated with a round-cairn of characteristic Bronze-Age type. The whole series suggests that at the extreme end of the megalithic period there was a new movement towards the interior of the country by way of the great river-valleys; and that this movement was in some degree stimulated by intrusions from across the Severn. These intrusions are indicated, for example, by the flint axe from Crickhowell (p. 53), the chert adze from the Gader Mountain (p. 58), the flint beaker-knives from Llanelieu and Ystradfellte (p. 130), and the handled beaker from Cwm-du (p. 114)—all without doubt derived from southern or eastern Britain.

The preceding paragraphs have included summaries of all the direct information derived from the contents of chambered tombs in Wales. This information is infinitesimal. The few human skulls found in a sufficiently complete state for measurement indicate that the tombs were used, at least in part, by a long-headed race or races, with fairly small features but often with somewhat prominent ridges over the eyes; and the few long-bones show that these

[1] C. E. Vulliamy, *Arch. Camb.* 1921, pp. 300–5. For subsequent excavations in these cairns, see *Arch. Camb.* 1923, p. 320.

people were of small or medium stature. Similar human types are characteristic also of the English long-barrows, and are commonly regarded as pre-eminently distinctive of the so-called ' long-barrow people '—a general term dangerously liable to obscure a considerable diversity between individual skulls and groups. In regard to the relative chronology of the various types of tomb in Wales, or, indeed, in regard to the approximate age of any one of them, our immediate evidence is negligible, with the exception of the small fragments of neolithic or earliest Bronze-Age pottery found at Tinkinswood and Capel Garmon. For further information we are compelled to turn elsewhere. First, however, it is desirable to tabulate the various types of chambered tomb at present known in Wales. They may be classified in eleven categories under two main headings :

A. *Tombs now without mound, or with mound of indeterminate extent.*

1. *Polygonal or circular dolmens.* E.g. Longhouse dolmen, in the parish of Llanrian, Pembrokeshire (Fig. 29) ; the ' hanging-stone ' dolmen, near Burton, Pembrokeshire. Such dolmens, however, may in some instances have formed part of a passage-tomb, as has been conjectured in the case of the Presaddfed dolmen in Anglesey.[1]
2. *Rectangular dolmens.* E.g. Bodowyr dolmen, Llanidan, Anglesey, where, however, as in some other cases, it is possible that the surviving stones are merely a fragment of a more complex structure. Other rectangular dolmens are illustrated under Series B.
3. *Plain oblong passage-tomb,* with little or no structural demarcation between entrance-passage and chamber. E.g. Portskewett, Monmouthshire (Fig. 29) ; Trefignath, Anglesey.
4. *Polygonal or circular chamber with entrance-passage.* E.g. Bryn Celli Ddu, Anglesey (Fig. 29).

[1] E. Neil Baynes, *Cymmrod. Soc. Trans.* 1910–11, p. 23.

5. *Entrance-passage with 'transepts'.* E.g. (probably) Penmaen Burrows, Glamorgan (Fig. 29).

B. *Tombs with mounds of approximately determinable extent.*

1. *Dolmen in one end (usually the eastern end) of an oblong or oval mound or cairn.* E.g. Tinkinswood (St. Nicholas) and St. Lythan's, Glamorgan (Frontispiece and Figs. 26–8). *Note*: both these dolmens are rectangular; no certain example from Wales of a definitely polygonal dolmen similarly placed is known to the writer.
2. *Dolmen in the long side of an oval mound.* E.g. Plas Newydd, Anglesey (Figs. 26 and 30).
3. *Simple passage, oblong or slightly wedge-shaped, within an oval mound.* E.g. Tyddyn Bleiddyn, Flintshire.
4. *Passage with transepts within an oval or circular mound.* E.g. Parc-le-Breos (Parc Cwm), Glamorgan (Fig. 26).
5. *Passage with transepts within the long side of an oblong or oval mound.* E.g. Capel Garmon, Denbighshire (Fig. 26).
6. *Megalithic cist completely enclosed within an oval mound.* E.g. Ffostill, near Talgarth, Breconshire (Fig. 26).

In brief it may be said, alike of simple dolmen-tombs and of passage-tombs in varying grades of complexity, that they fall respectively into two groups, of which one has the dolmen or passage in an *end* of the mound, whereas the other (perhaps derivative) has these in a *side* of the mound. Type B 6 seems to stand apart as a transitional form between the dolmen and the later (Bronze-Age) closed cist (see above, p. 83).

Before discussing these types further, it will be well to glance at the evidence available from a region where megalithic monuments have been more extensively explored. In Scandinavia, Montelius recognized four main periods:

I. Dolmen built of thick blocks of stone with flat surface inwards. Ground-plan of round or polygonal (often pentagonal) form, completely closed or open on one side. A single, very rough cover-slab, which, together with

a large part of the sides, is left uncovered. The mound is round, square, or elongated. Dolmens of this category are ' to all appearances ' the oldest.

II. Dolmen of squarish or oblong form built of somewhat thinner stones. Either completely closed or with one side open. Seldom more than a single stone on each side, and with a single cover-slab which alone is exposed, the remainder of the structure being covered by the mound. The mound is elongated. Dolmens of this type are later than those of the preceding category.

III. Passage-graves with square or oblong chamber, and with an entrance-passage extending from one of the shorter sides. Walls and roof of thin slabs. The roof exposed, or the whole structure concealed beneath a round mound or cairn.

IV. Stone cists with walls and roof of flat slabs. Rectangular in plan, at first with one end open, but later permanently closed and entirely covered by a round mound or cairn.

Between Groups I, II, and III (dolmen and passage-grave) are various intermediate forms. These, however, do not necessarily indicate accurately the process of evolution of the fully developed passage-grave from the simple dolmen. It must be remembered that both passage-grave and dolmen are found in many other megalithic areas, and both types doubtless reached north-western Europe in a fairly advanced stage of development. Intermediate types in this region therefore may often be regarded rather as the results of interaction than as true representatives of a process of transition. For the same reason, the greatest caution must be observed in applying the Scandinavian typology to Wales. As a working hypothesis it may be suggested that there the determining factor is less the shape of the actual chamber than the relation of the chamber to the mound or cairn with which it is associated. Thus the normal type of chambered barrow in Britain consists of a dolmen or passage-grave, with or without ' transepts ', approached through one of the narrower ends of an oval, egg-shaped, or oblong mound (e. g. the Tinkinswood example). In a minority of cases, however, the chamber or chambers—there are sometimes one or more on each side—are placed in a *long* side of the mound, occasionally as at Capel Garmon in Denbighshire

and Rodmarton in Gloucestershire with an *imitation entrance* still retained in one of the narrow ends. It is sufficiently apparent therefore that in such cases the process of evolution is : (i) mound with single chamber in one of the narrower ends (often facing some point of the compass between north-east and south) ; (ii) passage-grave with annexes or transepts similarly placed ; (iii) the annexes or transepts develop in size and tend to form separate chambers each approached directly through one of the *longer* sides of the mound, the earlier type of entrance being represented occasionally by stones forming a false or purely symbolical portal in one of the narrower ends.[1] In other, perhaps later, examples, the false entrance is apparently omitted, and we are left with an elongated mound containing one or more chambers set in one of the longer sides, as at Plas Newydd, Anglesey, and possibly one of the Carneddau Hengwm in Merioneth.[2] The initial cause of the changed relationship of chamber to mound may well have been the extended growth of lateral chambers or transepts which required a covering of greater width than the narrow end of the mound could provide.

Without more accurate evidence, however, as to the actual chronology of the monuments themselves, all conjectures based upon form are of doubtful value. In Scandinavia, Montelius maintains that his Group I (the rough dolmen) is the oldest in appearance and is never associated with objects of the Bronze Age, whereas the passage-graves and cists of Groups III and IV have in several instances yielded copper or bronze objects and contemporary pottery. Moreover, the gradual increase in the importance of the mound, from the half-exposed dolmen to the completely covered cist, offers a logical process of evolution which suggests a corresponding chronological sequence. Since this process of evolution culminated in the early Bronze Age, which in Scandinavia seems to have begun during the earlier part of

[1] This process of devolution is described by O. G. S. Crawford in ' Notes on the Long Barrows . . . in the Area covered by sheet 8 of the ¼ inch Map ', *Ordnance Survey Professional Papers*, n.s., No. 6.

[2] *Arch. Camb.* 1920, p. 130.

the second millennium B. C., the oldest Scandinavian dolmens (Group I) 'must have been erected *long* before the close of the third millennium B. C., how long cannot be said' (Montelius).

At the same time, as in other cases, it must be supposed that earlier types survived alongside later, and that certain dolmens, for instance, are contemporary with certain passage-graves. If we turn from Scandinavia to France this overlap is amply illustrated. Thus several dolmens in the Midi have yielded objects of the Copper or earliest Bronze Age.[1] These dolmens for the most part correspond with the Scandinavian Group II or with forms intermediate between Groups II and III, but even their greater accessibility to a Bronze culture permeating from the south can scarcely place them more than four or five centuries earlier than the passage-graves which are associated with early bronze objects in Scandinavia. A far closer contemporaneity of different types, however, is presented by a group of eleven mounds in the Forêt de la Boixe (Charente). Of these, the three largest covered true dolmens, whilst others were of dry-built masonry and either rectangular, polygonal, or circular in plan. They were all carefully excavated and found, by the identical character of the grave-goods, to belong to the same period. 'The varieties in form must therefore be attributed to the whim of the builders, unless they represent distinctions of class or occupation.'[2]

This instance of the association of round, polygonal, and rectangular plans suggests the inadvisability of applying the Scandinavian classification of tomb-chambers too closely to other areas. Indeed, if Montelius be right in his supposition that the polygonal or circular dolmen-plan was superseded by the rectangular plan, it is an anomaly that so many of the chambers in passage-graves, admittedly of later types, are still circular or oval in form. Whether or no the rectangular form was introduced subsequently to the polygonal, the latter seems to have persisted and to have had a material influence upon later types.

[1] Déchelette, *Manuel*, i. 404.

[2] *Ib.*, p. 411.

The data at present available for the dating of chambered tombs in north-western Europe may now be summarized as follows :

(i) The dolmens of Scandinavia are associated with neolithic objects, i. e. are probably earlier and perhaps considerably earlier than the middle of the second millennium B. C.

(ii) Dolmens in southern France are sometimes associated with copper or early bronze objects, i. e. the type there survived probably until the latter half of the third millennium B. C.

(iii) Passage-graves in France have yielded polished axes of stone and flint, objects of callais, barbed flint arrowheads, ornaments of gold, and beaker-pottery, all objects which may be assigned to the period of transition from Stone to Bronze, in this area approximately 2500–2000 B. C. In Scandinavia the passage-graves represent a corresponding culture which there continued to a somewhat later period.

(iv) No objects of copper or bronze and only one or two beaker-sherds have been found in the very few British chambered tombs which have been methodically explored. If our evidence is representative therefore—and it is admittedly very inadequate—these tombs illustrate the culture which preceded the introduction into this country of beakers and of bronze-working, two events which are conjectured to have occurred within a short time of each other about 2000 B. C.

The distribution of chambered tombs has often been described and discussed. Dolmens occur notably in the British Isles, southern Sweden, Denmark, northern Germany, Bulgaria, France, Portugal, Spain, Corsica, Sardinia, south-eastern Italy, northern Africa, Syria, the Caucasus, and the vicinity of the Black Sea, and in various parts of India. Passage-tombs of various forms occur in the same regions with the doubtful exception of northern Africa, and with

the addition of Greece, Egypt, parts of Asia Minor, and Japan. In Europe, chambered tombs are characteristic of districts bordering upon or easily reached from the sea, and are absent from the interior of the Continent, save in notably accessible districts. Similarly, to take a smaller unit, in Wales these tombs are confined almost entirely to the coastal counties; they are rare or absent in Montgomeryshire and Radnorshire, whilst in Breconshire they are wholly or largely of late type. A very rough numerical list of distributions in Wales is instructive, and is not seriously marred by an inevitable incompleteness (see map, Fig. 110).

Flintshire	1	
Denbighshire	7	
Carnarvonshire	12	
Anglesey	50	
Merioneth	7	
Montgomeryshire	No certain example.	
Radnorshire	None.	
Breconshire (with the Herefordshire border)	11	or 12 (mostly of late type, and all of them round the slopes of the Black Mountains).
Cardiganshire	2	
Pembrokeshire	45	
Carmarthenshire	22	
Glamorgan	9	
Monmouthshire	3	

It is recognized that the well-marked distribution of these monuments, mostly coastwise, together with the occurrence of details such as cup-marked capstones and holed slabs in identical forms from Pembrokeshire, Carnarvonshire, and Anglesey to Scandinavia, the Caucasus, and India, indicates that the complex known as the ' megalithic culture ', widely distributed though it be both in time and in place, sprang ultimately from a single seed. Where was this seed sown? No certain answer to this question has been, or probably will be, found. In a well-known thesis, Professor Elliot Smith sought the origin of the chambered tomb in the *mastabas* built in Egypt during the earlier part of the third

millennium B. C.[1] A typical *mastaba* consisted of an oblong cairn surrounded by retaining-walls and enclosing the upper part of a vertical shaft which was driven down into the living rock and actually contained the burial. The longer walls of the cairn projected towards the east and formed two horns or wings enclosing a fore-court or 'chapel'. On the front of the main structure near the northern corner was often depicted a false door, a symbolical entrance to the house of the dead, and elsewhere behind the same wall, communicating with the fore-court through a small hole in the retaining-wall, was a chamber which contained a statue of the deceased. Through the small hole the deceased, represented by the statue, received the offerings of his worshippers assembled in the fore-court.

The general analogy between the *mastaba* and many types of chambered tomb is too close to be altogether accidental. The Tinkinswood tumulus, for example, presents the rectangular cairn with retaining-walls, the eastern chamber with entrance at the northern end of its front wall, and the sides of the cairn carried forward to flank a fore-court where it is possible that the relatives of the deceased may have assembled for religious ceremonial. At Capel Garmon we have the further coincidence of the false door, with the burial otherwise inserted into the interior of the mound. Not least, the pierced front of the mastaba-shrine finds an obvious analogy in the holed stone which sometimes appears in dolmen-tombs, as at Plas Newydd, Anglesey. At the same time, the differences between the dolmen-tomb and the *mastaba* are important. In the former, with rare exceptions such as Capel Garmon and Rodmarton, the dead was buried actually in a frontal chamber, whereas in the latter the burial was deposited within a separate shaft and the chamber formed a shrine containing merely a representation of the dead beside a symbolical door. The suspicion at once arises that the *actual* type is of earlier origin than the symbolical or conventional type; that, if the normal

[1] *Essays and Studies presented to William Ridgeway* (1913), pp. 493 ff.

dolmen-tomb and the *mastaba* are derived one from the other, the dolmen-tomb may more naturally be regarded as the prototype.

Dr. Elliot Smith, however, reverses the order. He presumes the former existence of simpler and poorer types of *mastaba*, where the shaft becomes shallower or is altogether omitted, and where the statue is absent from the shrine although the shrine itself, the ' eternal house ' of the dead, is retained and finally utilized as the actual burial-chamber. In this view, the dolmen-tomb of the Tinkinswood type represents the *mastaba* in a decayed or devolved form. To the present writer this seems to imply an unnatural and illogical evolution from a complex to a simple form. Dr. Smith's evidence amply demonstrates a relationship between the *mastaba* and the dolmen-tomb ; it equally seems to show that the former is *not* parental to the latter.[1]

Other writers, arguing on more general grounds, have sought the original home of the ' megalithic culture ' variously in north-western Europe,[2] in Spain,[3] and in the neighbourhood of the Persian Gulf.[4] The diversity of these views sufficiently indicates the absence of evidence. Until all the principal megalithic groups throughout the world have been adequately explored and their evidence reduced to terms of a standard chronology, no certain solution can be expected. In Europe the general trend of ancient civilizations westwards and northwards supports the common (though not undisputed) view that the megalithic culture followed a similar course, radiating ultimately from some point in the Near or Middle East. In any case the process of diffusion

[1] A less valid objection to the derivation of dolmen from *mastaba* is the extreme rarity of dolmens in Egypt, the home of the *mastaba*. It is possible that dolmens were formerly more numerous there, but in any case Professor Elliot Smith might argue that the derivative dolmen would be more naturally expected at a distance from the domain of the true *mastaba*. It is on the typological argument that the *mastaba* theory really fails.

[2] Salomon Reinach, ' Le Mirage oriental ', *L'Anthropologie*, 1893, p. 715.

[3] E. Thurlow Leeds, ' The Dolmens of Spain and Portugal ', *Arch.* lxx. 229.

[4] H. J. E. Peake, *The Bronze Age and the Celtic World*, p. 59.

was doubtless exceedingly complex, and is probably obscured by extensive reflex movements and interactions which provide ready pitfalls for the theorist.

Passing from the problem of origins we are confronted with two questions little less controversial in character. By what means or agents was the practice of building megalithic structures diffused? And with what purpose?

It is evident at the outset that the passage-graves of Japan and of western Europe are not the work of a single race. The so-called 'megalithic culture' is not associated exclusively with any single people, and no useful purpose can be served by perpetuating the phrase 'megalithic race' or 'megalithic people' used by some writers in reference to the hypothetical transmitters of this culture. The assumption that this culture originated within some limited area implies that it was initially characteristic of the racial type dominant in that area; and to this extent we may speak correctly of an *original* megalithic race. But during its wide expansion in space and time, the megalithic culture passed to and was modified and developed in areas dominated by other racial types. Here, as in many other cases, we are faced with the *separateness* of culture and race.

Paradoxically, however, at the moment when the postulate of a single 'dolmen race' or 'megalithic race' was being abandoned, it has been revived in a new and unexpected form. Dr. Fleure, whilst carrying out researches into the physical characteristics of the inhabitants of Wales, found that the distribution of one type coincided remarkably with the distribution of megalithic structures. This type is 'powerfully built, often intensely dark, broad-headed, broad-faced, strong and square-jawed'. It is specially numerous on the Ardudwy coast, the south Glamorgan coast, in the Newquay district of Cardiganshire, Pencaer in northern Pembrokeshire, and other places. Outside Wales it occurs in Wicklow, south Devon, perhaps Cornwall, in the Gulf of Saint Brieuc, around Narbonne, in the Gulf of Salerno, and south-eastern Italy. Mr. Peake notes that the same type occurs in many of our commercial centres, amongst success-

ful Greek merchants in Athens and Alexandria, and in Renaissance portraits of the commercial magnates of Venice and Florence ; and the apparently widespread and successful association of the type with commerce has led Mr. Peake to christen these people ' the Prospectors '. He then points out the similarity between this type and the portraits on Etruscan tombs, and, again, between the Etruscan portraits and the sculptured figures on Sumerian reliefs. Hence he evolves the conjecture that his ' Prospectors ', a people with a genius for successful trading, set forth at least as early as the third millennium B. C. from Sumer or the neighbourhood of the Persian Gulf, or perhaps from farther east, in search of negotiable commodities such as precious ores ; that they were responsible for the spread of megalithic building ; and that, incidentally, they are represented historically by the Etruscans, whose early tombs ' look as though they had developed from the dolmen form '.[1]

On the anthropological side this theory encounters instant difficulty. From the megalithic tombs of Europe a considerable number of skulls and other bones have been recovered and examined. These skulls are naturally not homogeneous but, with comparatively few exceptions, they are of the long type (cephalic indices commonly between 65 and 75) which characterized most of the neolithic races in the maritime districts of Europe. The Welsh examples, as we have seen, conform with this rule. Only in a few regions, such as the Lozère in northern France, are distinctly broad skulls (cephalic indices of 80 or over) at all common. It must be admitted that the bulk of the anthropological evidence is overwhelmingly against the suggestion that the megalith-builders were prevalently a broad-headed people, and the partial coincidence therefore of modern representatives of the ' Prospector ' race with megalithic areas can scarcely claim any pertinence to the present problem.

The present failure of the theory, however, to surmount the anthropological difficulties does not necessarily stultify its value on the cultural side. In suggesting that the

[1] H. J. E. Peake, *The Bronze Age and the Celtic World*, Chap. IV.

megalith-builders were prospecting for precious ores and other valuable materials, Dr. Fleure and Mr. Peake are provisionally adopting the hypothesis put forward first in 1915 by Mr. W. Perry, who, after mapping the distribution of megaliths throughout the world, observed that this distribution, with few exceptions, coincided remarkably with that of metals (particularly gold), amber, pearls, and certain precious stones.[1] Was the practice of building megalithic structures diffused by an enterprising commercial people in the act of ransacking the world for negotiable wealth ?

For the general statement of this theory and its evidence the reader must be referred to the two papers cited in the foot-note. Briefly, Mr. Perry's conclusion is ' that the megalith-builders were miners : that they settled in mining regions. Also they made settlements in places where they found materials for their domestic and industrial implements and utensils and for their personal adornment.' Thus the megaliths of Devon and Cornwall are found generally on granite formations ; therefore the builders were exploiting the gold and tin which are, or were, found in association with this formation. In Dorset and Wiltshire the great megalithic monument, Stonehenge, and other remains of the same period are on the Upper Chalk, which produces the best flint for implement-making ; hence this district was the great implement-producing centre, the Birmingham or Sheffield of the megalithic epoch. The long-barrows of the same epoch in Oxfordshire lie near iron-working ; whence it is suggested that red haematite was obtained for purposes of adornment (neolithic rouge). The stone-circles and chambered tombs of Derbyshire are on or near the carboniferous limestone ; ' in this case the mineral sought for was lead, which occurs in the carboniferous limestone in all parts of the country '. In Wales, ' a cursory examination of the map shows that the great majority of

[1] W. Perry, ' Megalithic Monuments and Ancient Mines ', *Manchester Lit. and Phil. Soc. Memoirs*, 1915, No. 1 ; ' Megalithic Monuments and their distribution in England and Wales ', *ib.*, 1921, No. 13.

the dolmens and stone-circles are in close proximity to mining sites, mostly lead, but some of them copper and gold '. The dolmens of the Vale of Conway, and those round Criccieth and Portmadoc, are possibly explained by the presence of the fresh-water or the salt-water pearl-bearing mussel in these regions. The numerous dolmens of Pembrokeshire are less easily explained. There is some silver-lead in the Prescelly Mountains, but ' it seems that in this country we have to turn to a variety of explanations for the distribution of dolmens ', attaching chief importance to pearls. The presence of the passage-grave far up the river Wye at Dorstone, some fifteen miles above Hereford, is similarly explained ; and ' apparently there are pearl-rivers all along the coast of South Wales, and that may account for more than one of the dolmens that exist there '.

This much discussed theory is summarized in some detail because it is in detail that its weaknesses become apparent. It is true that, except in phases of unmitigated vagabondage or exceptional political stress, the distribution of population is determined directly by human needs and by human powers of fulfilling those needs. ' The pattern made by a population-distribution such as that of the megalith-builders reflects the needs of the builders. The needs of the builders once known will enable us to predict where they would tend to settle ' (Perry). The partial validity of this somewhat circular argument must be modified, however, by the allowance of due weight to contingent physiographical and other conditions. It has often enough been demonstrated that primitive civilizations, generally deficient alike in suitable tools and in adequate political co-ordination for the permanent clearing of forest-land, tend to concentrate in those regions which are naturally free from thick growth. Such regions are : coastlands, where strong winds generally prevent luxuriant growth ; the uplands of the interior above ' tree-level '—a variable datum line, but often considerably higher in prehistoric times than now ; and on certain geological formations, such as chalk, which are not favourable to the growth of trees. In any discussion there-

fore of the distribution of a primitive population, it is necessary to strike a balance between various factors, which again fall into three main categories : (i) probable method and direction of approach ; (ii) distribution of land suitable for settlement in the districts approached ; and (iii) the desirability of such land in relation to the principal occupation (hunting, pastoral, agricultural, commercial) of the settlers.

Applying these principles to the problems of the megalith-builders in Britain, and especially in Wales, we are confronted with the following results : (i) the megalith-builders came from the sea, and their primary distribution was coastwise ; (ii) the coastal regions and the uplands of the coastal counties are, generally speaking, free from thick forest growth, although a civilization sufficiently co-ordinated to build a Stonehenge with materials from Pembrokeshire was doubtless capable of maintaining clearings on a small scale in the woods of the lower slopes ; (iii) even those who seek a purely commercial explanation for the distribution of megaliths are compelled to find very different explanations in different places, and the main thesis—that the builders were miners—is continually found wanting in Britain. Thus megaliths near rivers or the coast are thought to have been built by pearl-fishers ; others inland were the work of flint-knappers ; in other regions jet or rouge are cited. To all these various activities we may surely add that of the herdsman with his sheep and kine, and a peaceful landscape where the fruits of the soil rather than those of the rocks beneath were the mainstay and the main object of human life.[1]

Nevertheless, if the ' mining ' or ' commercial ' theory errs,

[1] It does not help Mr. Perry's argument to point out, for instance, that Holyhead Island contains megaliths, and that on this same island certain poor hut-dwellers seem to have worked copper during the Romano-British period ; with the inference that what was done by the natives in the second or third century A. D. might equally well have been done by the megalith-builders at least two millennia earlier. On such lines it might almost be argued that the builders of the Bronze-Age tumuli which overlook the Rhondda valley were coal-miners !

it errs in degree rather than in kind. It is not unreasonable to suppose that certain habitable regions, such as the flint-bearing downs of Dorset and Wiltshire, were sought partially for the exploitation of their geological wealth. In this connexion an incidental point in Mr. Perry's thesis perhaps receives some slight support from another direction. Mr. Perry asks the question, How is it that, if the megalith-builders went to the Wiltshire downs primarily to exploit the flint of the Upper Chalk, there is no concentration of megaliths round the famous flint mines of Brandon in Suffolk, or near Cissbury, both regions rich in early flint mines? His answer is that 'the attention of the megalith-builders was mainly directed to the west, where they found gold, tin, and other minerals . . . and the flint industry was located in the nearest possible region to the sources of these minerals'. More recently, Dr. H. H. Thomas, of the Geological Survey, has established beyond all reasonable doubt that the 'blue stones' of Stonehenge were taken to Wiltshire from a small area, with definite geological boundaries, at the eastern end of the Prescelly Mountains in Pembrokeshire.[1] Now this tremendous feat of prehistoric transport implies some very exceptional religious motive, and the transfer of the stones suggests the complete or partial transference of a particularly sacred centre from an older home in Pembrokeshire to a newer home in Wiltshire. This inference at first sight conforms remarkably with the suggested eastward trend of the megalith-builders in southern Britain. On the other hand, it might be urged that the absence of megalithic structures from Brandon and Cissbury is, as likely as not, accidental. There is no native stone in these areas, and even if, as is not impossible, small 'foreign' stones were imported thither by megalith-builders, such stones would inevitably perish in subsequent building-operations.[2]

[1] *Antiquaries Journ.* iii. 239 ff.

[2] In reference to the absence of megaliths at Brandon and Cissbury, Dr. Cyril Fox writes: 'There is no suitable stone anywhere near these places. I doubt if Stonehenge itself would have survived but for the fact that (1) there has always been ample and accessible

For the most part, however, the conjecture that the megalith-builders sought primarily for metals is faced by a striking absence of confirmatory archaeological evidence. It is strange that, if the megalith-builders were miners, the more primitive megalithic tombs of north-western Europe seem, so far as our none too ample evidence goes, to be associated with a Stone-Age culture. This association would not in itself necessarily imply that metal was not used by the earliest dolmen-builders for *some* of their weapons and tools. It is likely enough that, in the earliest days of metal-working, either the extreme value of the new material or, more probably, the potent force of tradition excluded metal tools from the equipment of the dead. But the negative evidence of the dolmens is supported by the positive evidence of the (later) passage-graves, in which are sometimes found copper implements of the *earliest type*. The inference is that even the simplest copper implements had been unknown to the builders of the more primitive and presumably more ancient dolmens.

It is still open, however, to argue that the megalith-builders came originally, not to seek for utile metals, but to prospect for gold or amber or other precious materials. It is indeed necessary, on the general hypothesis, to presume some such motive for the great megalithic colonies in Scandinavia, where copper is absent and amber was doubtless an important attraction. Further, it is likely enough that, when the uses of copper and tin were becoming more widely recognized, some of the later megalith-builders began to prospect in these materials. But it is obvious that, if the builders came *originally* in search of copper and tin, they were *originally* already the carriers of a Bronze-Age culture ; a supposition which, as we have seen, cannot be maintained in north-western Europe. The ' mining ' theory therefore requires very considerable modification. It cannot be supposed that the spread of megalithic building in north-western

stone (in the form of sarsens) in the district for road-mending and building, and (2) the district itself is unsuited to arable exploitation.

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Europe is primarily associated with the exploitation of utile metals ; and while such materials as gold, amber, and jet may have been an attraction in certain localities, it is equally apparent that elsewhere the presence of good flint, or even merely of a dry and open tract of country, offers an adequate explanation.[1]

Here, as often, we are disturbed by the growing suspicion that the problem is enormously more complex than any of the pioneer-theories would indicate. The diffusion of megalithic building may indeed be supposed, within very broad limits, to imply the inspiration of a single group of peoples. The great chambered tombs must have been associated intimately with a certain range of religious ideas and practices which doubtless differed in detail locally, but normally bore the impress of a common type. Moreover, in regard to matters pertaining to religion and social custom man is by instinct conservative. He does not buy his religion with his groceries. The diffusion of the practice of building megalithic tombs therefore probably implies more than a commercial relationship between the various regions concerned. It indicates actual migration and settlement, accompanied doubtless by a progressive local modification of racial type. In this sense alone—in the sense of a continually fluctuating racial type, or group of types, gradually bearing onward a great tradition which was itself transfused with new ideas from place to place and from age to age—may we speak of a ' megalithic race ' or a ' megalithic culture '. In some such complex may we expect to find also the motives which in various times and places suggested or stimulated the diffusion of this ' race ' and ' culture '.

The dolmens have been described as the Pyramids of Wales. In a small degree they, like the Pyramids which are themselves overgrown chamber-tombs, testify to the co-ordinated effort of large communities, disciplined and directed by rulers whose authority doubtless owed much to

[1] Since this chapter was written, Mr. O. G. S. Crawford has similarly criticized the ' Prospector ' theory in *The Edinburgh Review*, Jan. 1924, pp. 101 ff.

a powerful religion. Dolmens such as those of Tinkinswood, Cefn Bryn, and Pentre Evan, with capstones weighing from ten to forty tons, must have been the work of many hands labouring readily and in unison. The transportation of the 'blue-stones' of Stonehenge from the Prescelly Mountains to Wiltshire implies that this social or political discipline and religious unity prevailed over large tracts of sea and land. We have already marched far from the isolated family-groups of the palaeolithic cave and the scattered communities of early neolithic fisher-folk.

It is probable that the megalith-builders practised a rudimentary agriculture. Attempts have been made to associate megalithic remains in various regions with certain forms of terrace-cultivation, and this point merits further investigation. The magnitude and permanency of megalithic structures are in themselves sufficient to suggest a settled population with strong local ties such as agriculture (or, indeed, mining) would provide. It is noteworthy that, in several instances, megaliths are found on comparatively low and even wooded ground, whilst at Bangor, in Carnarvonshire, a dolmen is said to have stood on the (present) sea-shore.

Standing Stones

'Standing stones' (*meini hirion* or 'maenhirs'), unlike the dolmen-tombs, are found with almost equal abundance in every county of Wales. At the outset, therefore, any inference based upon the general similarity between the two groups of monuments—the common use of large, roughly hewn or unhewn blocks of stone—must be received with caution, and the standing stones are included in the present chapter without prejudice as to date. We know indeed nothing about the standing stones of Britain, with the important exception that a beaker-burial was found by Captain and Mrs. H. B. Cunnington at the foot of one near Avebury in Wiltshire. Conjecturally we may ascribe them to the cult of stones which has prevailed in many times and regions; to the worship of trees and pillars, of which we find

traces in prehistoric Crete and elsewhere; or to phallic worship. Alternatively, attempts have been made in some cases to regard them, when found in groups, as aids to, or records of, the observation of the sun or other heavenly bodies in connexion with the determination of the seasons of the year. We do not know. They may in some cases be war-memorials or nameless tombstones [1]—the ancestors of those rough Early Christian tombstones which also abound in Wales. Excavation has rarely been attempted and has hitherto thrown little light on the subject. Certain it is that these gaunt stones have often been regarded with awe by the peasantry down to quite modern times, and many legends have gathered round them.

Sometimes standing stones are found in groups. The 'four stones' at Walton in Radnorshire, if not deposited naturally, may be cited as an example. Again, they occasionally occur in lines or avenues, as in the approach to a circle at Llanrhaiadr ym Mochnant in Montgomeryshire (Fig. 33). Attempts have been made to recognize somewhat similar avenues at Cefn Bryn in Gower and at Benton in Pembrokeshire,[2] but in both these cases the evidence is at least doubtful. In any case, Wales can boast nothing like the great multiple avenues of Avebury, Carnac, or the Isle of Lewis, or the embanked avenue which approaches Stonehenge.

Stone-circles

Stone-circles are still in most cases of uncertain purpose and age. Save in Scotland, they have rarely been scientifically explored, and such excavations as have been carried out are, with few exceptions, imperfectly recorded. The partial exploration of the great works at Avebury seems to indicate a neolithic origin for them; on the other hand,

[1] In Seine-et-Marne a skeleton was found beneath a standing stone, and burnt burials, sometimes with flint implements and in one case with a polished axe deliberately broken, have been found at the foot of similar stones in South Finistère. See du Chatellier, *Les époques préhistoriques et gauloises dans le Finistère*, pp. 31 ff.

[2] *Arch. Camb.* 1870, pp. 23 ff.

the detailed examination of part of the complex monument known as Stonehenge in Wiltshire has failed to yield decisive evidence as to period, although many of the barrows which cluster round it are of the early Bronze Age and so suggest the first half of the second millennium B.C. as a *terminus ante quem*. The common use of a circle of stones, sometimes incomplete,

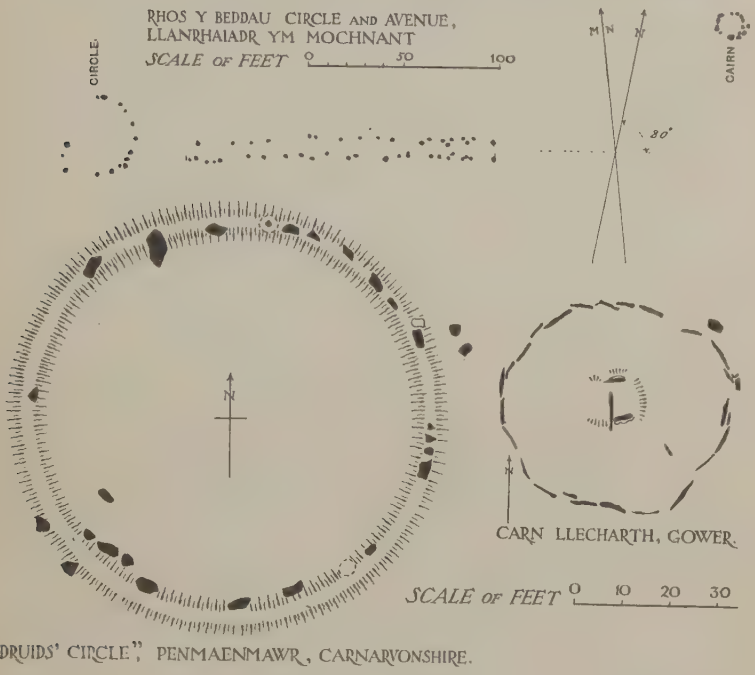


Fig. 33. Stone-circles

as a curbing to the round-barrows or cairns of the Bronze Age is consistent with this dating, although the resemblance between the free-standing circles and those set up (possibly for structural reasons) in the margins of mounds may be accidental. The two groups are frequently confused, especially where the removal of a mound has left its marginal stones standing free. A good example of this process may probably be recognized in a circle of erect slabs on Mynydd

Carn Llecharth in the parish of Llangavelach, Gower (Fig. 33). This circle is about 60 ft. in diameter, has a central cist, and consists of large flat slabs sometimes overlapping and for the most part inclined outwards as though from the pressure of a former mound.[1] It is likely enough that many (though probably not all) of the Scottish circles which have been described by Anderson and shown by him to enclose Bronze-Age burials are of similar origin.[2]

If we leave ' structural ' circles such as this on one side, there still remains a considerable number throughout Wales for which no obvious explanation is forthcoming. The recognition that in a few cases certain stones or openings in these monuments were seemingly oriented towards the sunrise or sunset at certain critical moments in the year, such as the summer or winter solstice, has led a generation of antiquaries to waste much time and ink upon the supposed astronomical properties of these circles. On the general assumption—which can scarcely be gainsaid—that the circles were directly or indirectly associated with religious practices, it would be quite in accordance with analogy to find that a ritualistic observance of the great seasonal changes, of so much importance both to flocks and to crops, is sometimes indicated in the plan of the monument. But Homer nods (or winks) when the Ancient Monuments Commission, discussing the azimuth of a line from a circle to a cairn at Llanbrynmair in Montgomeryshire, notes that ' the fact that the line points to the setting sun on St. David's day is so striking that any other transit is of minor interest '. The same Commissioners, on the other hand, point out that a circle at Llanrhaiadr ym Mochnant in the same county, approached from the east by a well-marked avenue of stones, is surrounded by high hills and would be quite unsuitable as an observatory (Fig. 33). Not one of the Welsh circles has yet been found to conform with any nicety to a convincing astronomical formula.

More recently, Mr. Hadrian Allcroft has abandoned the

[1] W. Ll. Morgan, *Antiquarian Survey of East Gower*, p. 44.
[2] J. Anderson, *Scotland in Pagan Times*, 1886, Lecture II.

Fig. 34. The ' Druids' Circle ', Penmaenmawr, Carn. (For plan, see Fig. 33)

azimuth for the *agora*.[1] Starting from the circular *agorai* or meeting-places in which the elders of the *Iliad* and the *Odyssey* took counsel, Mr. Allcroft sees in our stone-circles either the formal boundary or even the actual stone seats of the rough circular tribal council-place or moot. Thus near the entrance to a 'camp' on Pendine Head, Carmarthenshire, are remains of a stone-circle known as Napps Circle, about 150 ft. in diameter; the stones are 'rectangular blocks of limestone averaging 3 ft. long and rising from 14 to 24 in. above the turf. They are uniformly flat-topped—are in fact veritable seats.' In the same series Mr. Allcroft includes a work on the northern slope of Pwll Mountain, Marros, in the same county. This work consists of a low circular terrace, 9 ft. wide, of dry-built stone. At the lowest point is an entrance, immediately within which are 'the remains of a solid stone dais'. It is unnecessary here to follow the writer further into the details of his theory; but it is likely enough that some of the stone-circles were, like medieval churches, used for communal secular no less than for religious purposes in an age when the two were still essentially one and indivisible.

The only Welsh circles which have been submitted to extensive scientific excavation are two in the parish of Llanaber, Merioneth.[2] Both consisted of a low bank with external ditch, and in one case with at least fifty stones on or in the bank. The diameters were 120 ft. and 175 ft. respectively. The smaller contained a small empty cavity (thought to be a grave) in the centre, and yielded a few very coarse and indeterminate sherds of pottery. These results unfortunately add nothing to our knowledge.

Earthen (as distinct from stone) circles are rare in Wales, but occasionally occur, as at Brynford in Flintshire.[3] The best surviving stone-circle is probably the well-known example (perhaps one of a former group) on the eastern

[1] *Cymmrod. Soc. Trans.* 1918–19, pp. 1 ff.
[2] *Arch. Camb.* 1920, pp. 102 ff.
[3] *Bulletin of Celtic Studies*, i. 369.

shoulder of Penmaenmawr, Carnarvonshire (Figs. 33, 34).[1] Reference has already been made (p. 100) to the Pembrokeshire origin of some of the material used in Stonehenge, and the possibility that the Prescelly Mountains may have been an area of special holiness at the end of the Stone or beginning of the Bronze Ages is suggested by the presence there of several small circles which doubtless indicate the former existence of a considerably larger number.[2]

Finally, it is noteworthy that, unlike the dolmens, stone-circles are found in the interior of Wales as well as in the coastal counties. Their distribution therefore, like that of the *meini hirion*, conforms with that of the Bronze Age rather than with that of earlier periods, and agrees with the evidence yielded by excavation in Scotland (above, p. 106).

[1] W. Bezant Lowe, *Heart of Northern Wales*, p. 52. The stones of this circle stand on a low gravel bank about 8 ft. wide (see Fig. 33).
[2] *Antiquaries Journ.* iii. 257; *Arch. Camb.* 1911, pp. 287 ff.

IV

THE BEAKER-FOLK

The end of the third and the beginning of the second millennia B. C. were characterized by considerable movement amongst the peoples of mid-Europe. This restlessness may have been in part the result of a period or periods of drought and a consequent westward tendency of the population of the Russian steppes in the direction of the central hill-districts. Such an intrusion might be expected to cause a partial displacement of the resident population of these districts, and would in some degree explain the migrations which are the subject of the present chapter. But it is probable that other reasons combined with climate to create a phase of unrest. The period was, in most parts of Europe, one of radical change. Metal was gradually replacing flint or stone as the staple material for weapons and tools; metalliferous areas were suddenly springing into prominence; trade received a new impetus, and was assisted by the gradual clearing of cross-country routes; everywhere the economic and social life of Europe was undergoing rapid alteration and readjustment. Such conditions, at such a time, inevitably resulted in folk-movements on a considerable scale.

The best known of these movements was that of the 'beaker-folk', so called from the distinctive type of pottery —the 'beaker' or 'drinking-cup'—with which their remains are associated.[1] It is generally (though not universally)

[1] The literature on this subject is extensive. It includes, notably: Abercromby, *Bronze Age Pottery*, i; O. G. S. Crawford, 'The Distribution of Early Bronze Age Settlements in Britain', *Geographical Journal*, xl (1912), pp. 184 ff.; L. Siret, *Questions de chronologie et d'ethnographie ibériques*, i. 205 ff.; J. Palliardi, 'Beiträge zur Kenntnis der Glockenbecher-kultur', *Wiener prähistorische Zeitschrift*, 1919, pp. 41 ff.; R. A. Smith, 'Foreign Relations in the

agreed that the beaker-type was evolved in Spain during the latter part of the neolithic period, probably from small baskets or vessels of esparto grass, and that the ornamental horizontal bands characteristic of the Spanish ' zone ' beakers are a reminiscence of the hoops which formed the framework of the woven prototype. From its form the Spanish beaker has been named the ' bell-beaker ' ; it is often somewhat squat with an S-shaped profile, and sometimes with a round, more often a slightly flattened, base. The zoned decoration is incised or stamped and of the simplest kind, ranging from oblique strokes to single or multiple chevrons, the latter comparatively rare.

From Spain the beaker industry in its original or closely derivative forms spread in two directions. On the one hand, it occurs plentifully in Brittany, but may not, by this route, have extended farther northwards than the Channel Islands or farther eastwards than the valley of the Somme. On the other hand, in the south it made its way eastwards to Sardinia and Sicily, and north-eastwards into Lombardy whence it penetrated in increasingly divergent forms to the great river-basins of Central Europe, as far east as Budapest and Breslau. In so doing, it passed into the hands of races very different from those amongst which it had originated, and was met and informed by new cultural influences. Local types were evolved and linked together by numerous transitional varieties. Thus the mid-European 'cord-beaker' is characterized by a small, bulbous body largely devoid of decoration and a tall, almost cylindrical neck, ornamented with horizontal bands impressed by twisted or plaited cord upon the wet clay. It has been suggested that this type was of independent local origin, but, even if such was the case, it quickly merged in and was influenced by the beaker tradition. Another local variant is characterized by a sub-

Neolithic Period ', *Proc. of Prehist. Soc. of East Anglia*, iii (1918–19), pp. 28 ff. ; H. J. E. Peake, *The Bronze Age and the Celtic World*, pp. 77 ff. ; Déchelette, *Manuel*, i. 549 ff. ; Nils Aberg, *Das nordische Kulturgebiet in Mitteleuropa wahrend der jungeren Steinzeit*, pp. 186 ff., and *Die Steinzeit in den Niederlanden*, pp. 38 ff. ; Cyril Fox in *Arch. Camb.* 1925 ; and other papers noted below.

division of some of the decorative zones into small panels or metopes sometimes plain but more often filled with simple geometrical patterns based upon the triangle. This type of decoration occurs in Bohemia, Saxony, and the neighbourhood of the lower Rhine, and has, not very aptly, been called the ' Batavian ' or Dutch type.

The heterogeneous groups of beakers which thus found their way into northern Germany, Jutland, and Holland may have been supplemented by strays distributed coastwise from the Brittany series, although such links are not yet proved. Nor, in the absence of any definite example of the Spain-Brittany bell-beaker from Britain, is it necessary to assume that the zone-beakers found occasionally in southern England were derived directly from Brittany.[1] It is safer, at present, to assume that they were introduced with other types by the immigrants who, coming from the direction of the Rhine, first reached our shores at about a date provisionally estimated at 2000 B.C. During the following centuries these immigrants spread over a large part of England, Scotland, and Wales, but scarcely reached Ireland, where only two (or three) beakers have been found.

The fabric of many of the beakers is good ; their walls are thin, and often have a polished, reddish-brown surface. The decoration is sometimes incised with a pointed tool, sometimes impressed with a cord, and sometimes stamped with a single or multiple stamp.

The British beakers were classified in regard to form by the late Lord Abercromby, who recognized three main types : A, with body more or less globular, divided from the upper part by a pronounced central constriction ; B, with body oval (not globular) and gradually curving into a neck or rim often of comparatively slight elevation ; C, a debased variety of A, but with neck much lower, not more than one-third or one-fourth of the height of the body. Within very broad limits this typological classification may have a chronological significance. Thus type C, which is especially

[1] It is not safe to be dogmatic on this point, but the direct influence from Brittany was in any case slight.

characteristic of northern Britain, is certainly later than type A. Type B, on the other hand, while it seems in the main to occupy an intermediate position, may be almost, if not quite, as early in origin as type A, and recent analyses of *decoration* have suggested that *form* alone may be an unreliable criterion of date. The point is of considerable importance in our reconstruction of the beaker episode. Working primarily upon the distribution of forms, Lord Abercromby inferred that ' the first party of invaders landed at some unknown point on the south or south-east coast and then spread over the province lying south of the Thames ', thence slowly, generation by generation, penetrating northwards. A fresh examination, however, of the distribution of form, supplemented by a study of decoration, has now established the hypothesis that the ' Beaker Invasion ' was no local event but was rather the gradual infiltration of scattered bands of immigrants some of whom landed upon our southern shores, at Southampton Water and elsewhere, whilst others made more or less directly for the inlets of the east coast from Essex to Yorkshire and perhaps even farther north.[1] It is interesting to note that more than a millennium later other small groups of new-comers seem once more to have introduced new Continental cultures into Britain along a similarly extended front (see below, p. 200).

The list and diagrams subjoined to this chapter summarize the evidence available from Wales. The nineteen beakers known are widely scattered, and the types are mixed. Geographically, however, they fall into three main groups : (*a*) those in South Wales (eight) ; (*b*) those in North Wales (seven) ; and (*c*) those in mid-Wales (four). The miscellaneous character of these groups, however, appears to rob their distribution of any special significance. A more detailed study of the beaker-culture in Britain seems to indicate that, within the broad limits already defined, the movements of the beaker-peoples were both devious and spasmodic, and naturally more so in the north and west

[1] A. G. Wright, *Essex Arch. Soc. Trans.* (n. s.), xv. 286 ff. ; E. T. Leeds, *Antiquaries Journ.* ii. 330 ff.

than in the south and east. In Wales the comparative attractiveness of the coastlands, together with their accessibility in the one case from Somerset and the Cornish peninsula and in the other from Yorkshire, Derbyshire, and Westmorland, suffices to explain our groups (*a*) and (*b*). The third group is associated with the great river-basins—the Severn, the Wye, and their feeders—and suggests infiltration from East Anglia by way of the inhospitable Midland Plain ; there is, for example, some slight reason to suppose that a prehistoric trade-route entered Wales from Worcestershire, and other evidence for early communication between Breconshire and central or southern England can be cited (see pp. 54, 56, 85, 282). The Breconshire handled-beaker in particular is at present unique in western Britain and is almost certainly an intrusion from East Anglia where, between the Fen country and Yorkshire, upwards of a dozen have been found (see below, p. 126, No. 15).[1]

The physical characteristics of the beaker-folk, though less homogeneous than is sometimes supposed, are distinctive and well known. Comparatively few skeletons *definitely* of neolithic age have been identified in Britain, but so far as the evidence goes it supports the conventional view that the neolithic inhabitants of the island were generally of small or moderate stature, with long heads and oval faces, narrow nose and fairly small features ; a hardy but not markedly muscular type. The dominant type amongst the beaker-folk, on the other hand, has been crystallized by Abercromby as follows :

' The skull was short and square, the general aspect of the face rugged and forbidding, owing to the great development of the superciliary ridges and of the eyebrows. The cheek-bones were prominent and the nose projected much beyond the prominent eyebrows ; the lower jaw was square, massive, often prognathous, and terminated in a prominent chin. Coupled with teeth often of extraordinary size many of these invaders must have presented the appearance of great ferocity and brutality, in a degree which far surpasses our modern conventional representation of the criminal of the type of Bill Sikes. They were rather taller than the old inhabitants and had the advantage of a powerful build,

[1] On the whole problem of beaker-distribution see the survey by Dr. Cyril Fox in *Arch. Camb.* 1925.

Fig. 35. Crouched burial, Merthyr Mawr, Glam.

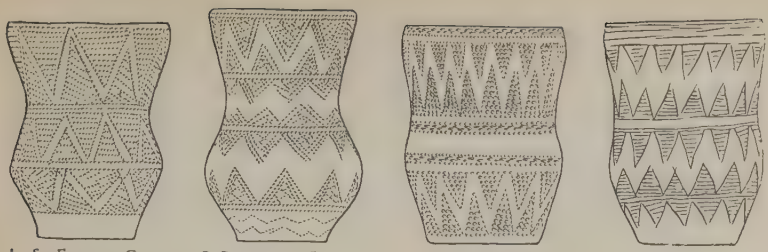
and great muscular development. Their women were less ill-favoured; the superciliary ridges were much less developed, and the facial outlines being on finer lines gave them a softer and less repelling appearance.'

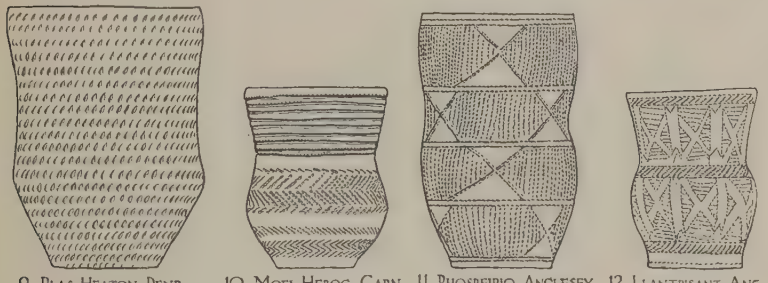
This picturesque description, though broadly applicable, probably exaggerates the grossness of the prevailing beaker-type, and certainly requires modification in a considerable minority of instances. A characteristic series of burials from Glamorgan will serve to illustrate the diversity which underlay the superficial uniformity of the type.

Amongst the blown sand of the Glamorgan coast between Merthyr Mawr and Porthcawl are a number of tumuli, of which one at least is of the beaker-period.[1] When excavated it was found to be upwards of 50 ft. in diameter and 21 ft. in height, and to consist of sand with a crust of stones. In the mound were six skeletons, all buried in the characteristic crouched or flexed position with the knees drawn up towards the chin (possibly an attitude of sleep). Two of the burials were in cists, one containing the skeleton of a man lying on the left side with the head towards the north and resting on a stone, the other containing the bones of two children under six years of age, apparently not interred simultaneously. Which, if either, of these cists represents the primary interment was not ascertained, but they both seem to have preceded the insertion of three other burials into the mound, two without any protection, and the third roughly enclosed with stones (Fig. 35). One of the skeletons lay on its right side, the head to the north-north-west, with a beaker and a piece of flint, apparently a large flint knife, near the left shoulder. The second skeleton lay on its back with the legs turned to the right, and the head in a southerly direction and pillowed on a stone, and a small beaker near it. The third skeleton also lay on its back, with the legs turned to the right, the head towards the north, and a beaker at the feet; whilst over the bones was 'a considerable scattering of charcoal'.

The two surviving beakers are here illustrated (Fig. 36, Nos. 3 and 4). The skeletons, with the exception of the two

[1] J. Ward, *Arch. Camb.* 1919, pp. 336 ff.; D. Hepburn, *ib.*, 1905, pp. 211 ff.





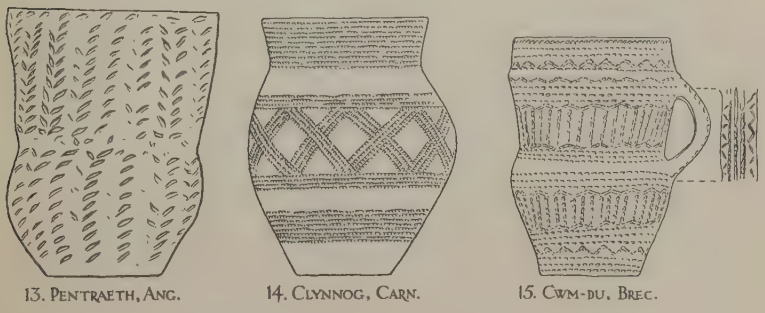


Fig. 36. Beakers from Wales. ($\frac{1}{6}$)

children, were those of men ranging in age from about fifteen to fifty years, and in height from about 5 ft. 1 in. to 5 ft. 7 in. The skulls were typical of the beaker-folk in their breadth (brachycephalism), the cephalic index varying from 81·7 to 86 ; but their features in some cases presented marked points of difference. One skull shows the receding forehead, prominent brow-ridges, and large teeth of Abercromby's ' Bill Sikes ' type. Another has a high domed forehead, less prominent brows, and smaller teeth, which, however, tend to project unduly and render the skull ' mesognathous '. In this, as in other examples, the nasal aperture was broad, whereas one skull had leptorhine or high and narrow nostrils. Without recapitulating further the results of Professor Hepburn's analysis, it is sufficiently clear that the characters of these skulls are mixed, and that the beaker-folk, in Britain as on the Continent, though generally thick-set, muscular, and rugged in aspect, cannot be described under any single formula. The thigh bones of all the Merthyr Mawr skeletons showed the partial flattening which is commonly found amongst peoples who are wont to squat upon their heels when at rest.

Other beaker-burials in Wales call for less comment. At Llancaiach Isaf, in the parish of Gellygaer, Glamorgan, a well-made cist, covered by a large slab, contained a late beaker, some ' bronze ornaments ' of which no description is preserved, and the skull (and doubtless other bones) of an infant of characteristic beaker-type. This skull is of special interest as showing symptoms of rickets, and is thus by far the earliest case of this disease known in Britain or probably in the world.[1] Rickets is now generally attributed to certain deficiencies due alternatively to the absence of sunshine or to inadequate nourishment—both causes just as likely to operate amongst the bleak and rainy hills of Glamorgan in prehistoric times as in the dingy poverty of our modern slums.

Another beaker-burial formed the primary interment in a stony mound destroyed in 1907 at Pentraeth, Anglesey. At that time the mound was about 6 ft. high and slightly

[1] *Antiquaries Journ.* iii. 21 ff.

oval in shape, with axes of 84 and 74 ft. At a distance of about 14 ft. within the circumference was a ring of large and rough limestone blocks ; if correctly observed, this ring, as is not infrequently the case, was incomplete on one side (the north-east). The mound had probably been enlarged for secondary burials, of which at least four were found. The primary burial consisted of the bones of an unburnt body laid on the left side, the head towards the north, and the knees doubled up to the chin, within a stone cist covered by a large capstone. Behind the head was a beaker (Fig. 36, No. 13), and elsewhere in the grave were a small copper or bronze knife and a jet button with converging perforations —both objects characteristic of the Early Bronze Age. The skeleton has not yet been described.

These examples will suffice to illustrate the general characteristics of the beaker-burials. The dead were nearly always buried unburnt in barrows or cairns ; very rarely, whether on the Continent or in Britain, have beakers been found with cremations.[1] Of the six or seven beaker-cremations known from this island, two or perhaps three have been found in Wales or the Marches (Nos. 2, 8, and 16). In most, perhaps all, of these exceptional examples the beakers are of late type, and probably belong to the period when the beaker-culture was being superseded by that of the middle Bronze Age, during which cremation became almost universal in Britain. This change in custom doubtless reflects important changes in social and religious ideas, but about the precise nature of these changes it is idle to speculate. It has been thought that cremation, during which the ' soul ' or some equivalent emanation may have been supposed to rise from the dead with the smoke of the funeral pyre, may have implied a more metaphysical conception of the future life than was present to the minds of those who equipped their unburnt dead for a continued existence in or near the tomb. Be that as it may, the

[1] For burnt beaker-burials in Austria, see J. Palliardi, *Wiener Prähistorische Zeitschrift*, 1919, pp. 41 ff. ; for most of those in Britain, see Abercromby, *Bronze Age Pottery*, i. 17.

funeral customs of the beaker-folk, as of countless other peoples in all periods and places, were based upon the idea of providing weapons, ornaments, and vessels containing food for the service of the dead in a world scarcely less tangible than our own. Such customs often devolved into mere symbolism and convention, or merged into other notions such as that of offering gifts to the dead in token of awe or affection; and we cannot say what stage in this process is represented in the tombs of the beaker-people. It is possible indeed that the ages almost meet in the customs, doubtless but half understood, observed at a gipsy funeral celebrated in Italy as recently as 1920. The ceremony was so replete with the ideas or traditions of an older world that it may pardonably be recounted at length:

'The funeral in question was of a woman chief of a Norwegian gipsy tribe encamped outside Bergamo. The old woman had reached the age of eighty-two. The procession was preceded by twenty-three musicians playing dance music. The coffin was followed by priests, and there were in rear of the procession a number of carriages on which the curious or sympathizing public could take seats if they wished to accompany the hearse as far as the cemetery. These strangers were offered ten lire each by the relations of the deceased at the cemetery.

'The son of the dead woman directed the procession, ordering a halt now and then so that the musicians could play some music. At the cemetery the body, which lay in a coffin lined with white silk and with necklaces around the throat, was deposited in a *columbarium*. In the tomb were placed three bottles of champagne, a roast chicken, and several gold pieces. After the funeral a sum of money was given to the landlord of a local inn, and anybody who wished to drink to the memory of the deceased could do so. The gipsies then threw handfuls of earth at each other.

'After this, a banquet was prepared, and a bottle of beer was placed before each of the guests. No one, however, touched any of the food—although they had not eaten for twenty-four hours—until the brother of the deceased arrived and lit some ceremonial candles and burnt some incense. After this the mourners ate heartily, except the son of the old gipsy-chief who alternately danced and wept.'[1]

[1] From the *Observer* newspaper, 5 Dec. 1920. For analogous customs amongst English gipsies, see T. W. Thompson in *Journ. of the Gipsy Lore Society*, 3rd ser., iii, pt. ii.

This elaborate survival of paganism, although scarcely a scientific 'document', may be cited in the present context by virtue of those features—literal provision for the dead, and insistence upon the social aspects of the ceremony—wherein it may not be altogether remote from the primitive culture with which we are dealing. It has been thought that other rites, such as the immolation of relations or dependants, or even a ceremonial cannibalism, may occasionally have entered into the burial ceremonies of the beaker-folk.[1] If we may believe Diodorus and Strabo, the practice of eating human flesh obtained in the British Isles as late as the first century B. C., and the custom of immolation has died hard amongst advanced civilizations in modern times. On the whole, however, the beaker-folk, in spite of their rugged physique, seem to have been a comparatively peaceable people. Of their habitations we know indeed singularly little. A few circular hut-floors at Taplow in Buckinghamshire and still less definite remains of a settlement at Peterborough are the only indications in this country. Central Europe has apparently produced no certain occupation-site of this people; and it is probably significant that their graves occur there only in small groups and thus suggest a scattered and more or less mobile population. Such a supposition is consistent with the general character of their remains. There is no indication that they practised agriculture on any appreciable scale,[2] and they were doubtless largely in the pastoral stage of civilization—the bones of ox, sheep, and pig have been found in their graves. It was perhaps as hunters rather than as warriors that they used flint arrowheads and stone guards to protect the wrist from the bow-string. For a multitude of purposes they used axes of stone or sometimes of copper or bronze, and knives of finely wrought flint or of metal (see below pp. 130, 141). They adorned themselves—men and women alike—with necklaces, and wore incised buttons of jet.

[1] Abercromby, i. 69 ff.

[2] The imprint of an ear of corn on a potsherd apparently of the beaker-period at North Berwick seems to be the only evidence on this point.

Handled cups of gold, amber, and shale, found in southern England, are allied to beaker-types, and suggest occasional links with Scandinavia—links which are further supported by the decoration of some of the beaker-pottery.[1] But there is little evidence that the beaker-folk took any prominent part in foreign trade, or were to any notable extent instrumental in the introduction or development of metal-working in these islands. The earliest metal types, such as the flat copper axe and the halberd, are especially numerous in Ireland, which the beaker-people scarcely reached. It is probable, though not certain, that the first beaker-immigrants already used copper or bronze to a limited degree ; and it is likely enough that the movements represented by the beaker-migration incidentally stimulated the circulation of new ideas such as that of working metal. The old view, however, that the beaker-folk were pre-eminently the ' Bronze-Age invaders ' of Britain is not supported by evidence and has now been abandoned.

Reference has been made to the modern view that the beaker-remains indicate the pervasion of small bands of immigrants landing at intervals on various parts of the southern and eastern coasts and gradually spreading inwards and northwards. It may be supposed that they dominated the previous inhabitants of the districts which they occupied, but they came rather as determined settlers than as an invading army. What brought them from their Continental homes ? The gold of Ireland has been postulated as at least one of the determining factors ; if so, it can only be said that they were as unsuccessful as other seekers in reaching their El Dorado. It is probable, however, that the main compelling cause lay behind them, in the unsettled state of the increasing populations of Central Europe. The beaker-men, strong in physique and in character, may well have lacked the agility of mind which might have enabled them to adapt themselves to the rapidly changing economic and social conditions of the time. In ultimate Britain, for several centuries they held their own, probably as a ruling

[1] See Cyril Fox, *Antiquaries Journ.* iv. 131 ff.

caste ; but, even there, their individuality seems eventually to have merged into that of the native population, and the succeeding period is marked by the revival and development of native types of pottery and by the evolution throughout the British Isles of something approaching a national Bronze-Age culture.

It remains to define the limits of the beaker-period. In a general estimate of the duration of the British Bronze Age, Abercromby conjecturally allotted a period of five hundred years for the development and diffusion of the various types of beaker. This estimate probably errs, if at all, on the side of liberality. The beginning of the period is assigned tentatively to *c.* 2000 B.C., since the arrival of the beaker-folk coincided closely with the introduction of metal-working (in copper or bronze) into this country, an event which seems to have occurred within a century or two of that date. We thus guess the beaker-period at 2000–1500 B.C., on the understanding that such a date is rather symbolical of the relative historical position of the beaker-phase than an indication of its absolute chronology.

As an appendix to this chapter, reference may be made to an interesting suggestion, offered very tentatively by Dr. Fleure,[1] that the tall, rather fair-haired, broad-headed men, with well-marked brow-ridges divided by a median depression, who are found especially in the ' Bala cleft ' between Ruabon and Dolgelly, may be modern representatives of the beaker-people. The Bala cleft forms a very distinctive transverse channel between the northern midlands and the western coast, and the presence of beaker people along this line would conform with the theory that they were attracted by the gold-fields of Ireland. The distribution of the known beakers, however, offers no support to these conjectures, and Dr. Fleure himself lays no stress upon his suggestion.

The following is a list of beakers found in Wales or on the Welsh border :

1. Glamorgan, at St. Fagan's ; Type A II ; found in a hole

[1] *Cymmrod. Soc. Trans.* 1915–16, pp. 117–21.

covered by a slab, and associated with two skeletons, cephalic indices 83·9 and 86·15 ; in Nat. Mus. Wales ; see *Arch. Camb.* 1902, p. 28, and Abercromby, *Br. Age Pot.* i. 27.

2. Glamorgan, 1 mile S. of Dolygaer Station and 5 miles N. of Merthyr Tydfil ; Type A II ; found in a cist, apparently with burnt bones and a barbed and tanged arrowhead ; in private possession ; see *Arch. Camb.* 1902, p. 25, and Abercromby, p. 27.

3–5. Glamorgan, on Merthyr Mawr Warren, Porthcawl ; Type B ; all found in a cairn, each beside a crouched skeleton, cephalic indices 85·9, 84·6, and 83·9 ; with one of the skeletons was a large flint knife ; two of the beakers in the Nat. Mus. Wales, the third lost ; see *Arch. Camb.* 1919, pp. 338, 342, 345.

6. Glamorgan, at Llancaiach Isaf, Gellygaer ; Type C ; found in a cist with 'bronze ornaments' and the skull of an infant which had died of rickets ; in Nat. Mus. Wales ; see *Ant. Journ.* iii. 21.

7. Montgomeryshire, near Aberbechan Hall, Llanllwchaiarn ; Type C ; in Welshpool Museum ; see *Arch.* xliii. 394 ; *Arch. Camb.* 1902, p. 199 ; Abercromby, p. 27 ; Roy. Com. Anc. Mons., *Mont. Inventory*, 617.

8. On the Denbighshire–Shropshire border, about 1 mile N. of Glan-yr-afon House, Llanyblodwell ; Type B I ; said to have been found inverted over burnt bones in a cist within a cairn ; see *Arch.* xliii. 394 ; *Arch. Camb.* 1868, p. 268 ; Abercromby, p. 27.

9. Denbighshire, at Plas Heaton, Henllan ; Type B I ; found in a cist near the head of a crouched skeleton, cephalic index 78 ; now at Plas Heaton ; see *Arch. Camb.* 1868, p. 273 ; Thurnam and Davis, *Crania Britannica*, No. 23 ; Abercromby, p. 27 ; Roy. Com. Anc. Mons., *Denb. Inventory*, 218, 234.

10. Carnarvonshire, on Moel Hebog ; Type C ; in Brit. Mus. ; see Abercromby, p. 27.

11. Anglesey, Rhosbeirio ; Type A III ; found in a cist, apparently near the head of a crouched skeleton ; see *Arch. Camb.* 1868, p. 271, and Abercromby, p. 27.

12. Anglesey, on the banks of the Alaw, 1 mile NE. of Llantrisant ; Type A II ; found apparently with an unburnt skeleton ; in Brit. Mus. ; see *Arch. Camb.* 1868, p. 238, and Abercromby, p. 27.

13. Anglesey, near Pentraeth ; Type B ; found under a tumulus in a sunk grave with a crouched skeleton, small bronze knife, and jet button with converging perforations ; in possession of Anglesey Antiquarian Society ; see *Arch. Camb.* 1908, p. 214.

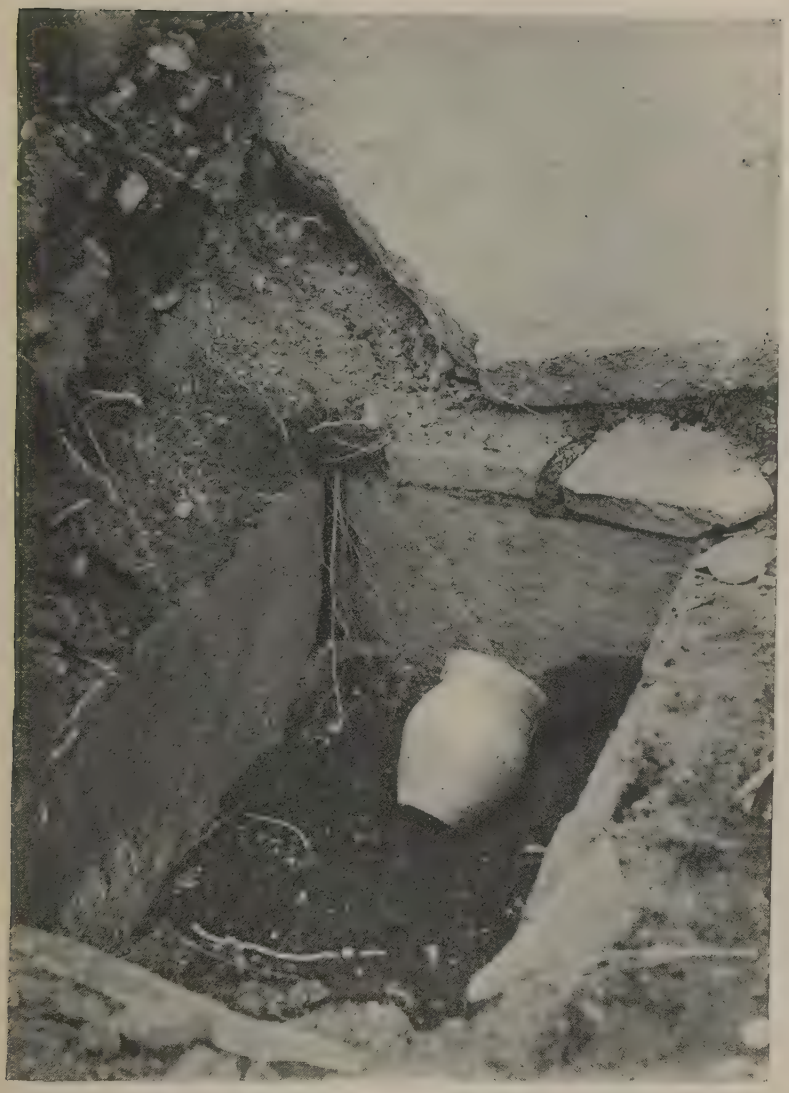


Fig. 37. Beaker-burial at Clynnog Fawr, Carn.

14. Carnarvonshire, on Penarth Farm, Clynnog (Fig. 37); Type C; found with bones, thought to have been those of a child, in a cist within a cairn; now at Penarth Farm-house; see *Arch. Camb.* 1910, p. 399.
15. Breconshire, in a cairn known as Pen Gloch-y-pibwr, at a height of 2,155 ft., in the parish of Cwm-du. This is the first handled-beaker from western Britain; of sixteen examples recorded from these islands, twelve came from the Eastern Plain and its borders from Yorkshire to Cambridgeshire, one from the upper Thames Valley, and two from the south coast—Dorsetshire and Cornwall. See Cyril Fox in *Arch. Camb.* 1925.
16. Carnarvonshire, in a mound on Bwlch-y-Gwryd, below Drum; of 'Batavian' type; said to have been filled with ashes; see W. B. Lowe, *Heart of Northern Wales*, p. 39.
17. Carmarthenshire, at Pale Bach in the parish of Cyffig; in cist $2\frac{3}{4}$ ft. by $1\frac{3}{4}$ ft.; fragments; decoration apparently in two friezes of voided chevrons between bands of horizontal grooves; in Nat. Mus. Wales; see Cyril Fox in *Arch. Camb.* 1925.
18. Breconshire, parish of Llanelieu; Type uncertain (? C); found with a fine flint knife in a cairn; see *Arch. Camb.* 1871, p. 327.
19. Glamorgan, at Hen Dre'r Gelli in the Rhondda valley; small fragments, found apparently in a cist, of a waisted beaker, Type A or C; zonal decoration impressed with a notched tool and consisting of bands of zigzag defined by horizontal lines; see *Arch. Camb.* 1906, p. 303.

V

THE BRONZE AGE

We have seen that the arrival of the beaker-folk at a date conventionally fixed at 2000 B.C. heralded the introduction of metal-working into Britain. It has been conjectured, without evidence, that gold was the metal which first attracted the attention of primitive man in western Europe. Be that as it may, it was the spreading knowledge of the utility of copper, either pure or slightly alloyed, that gradually brought the long Stone Age to an end throughout Europe between the end of the fourth and the middle of the second millennia B.C. It is obvious that, originally, copper in the natural state was somewhere used before bronze, which is copper hardened by the admixture of about 10 per cent. of tin; and some of the earliest metal implements from Wales are of almost pure copper.[1] But since

[1] Of three Welsh flat-axes analysed by Professor C. H. Desch, one is of copper whilst two are of bronze. The analyses (in percentages) are:

	Probably from Merioneth	*Dolwyddelan, Carn.* (*Fig.* 43, 3).	*Usk, Mon.* (*Fig.* 43, 1).
Copper	97·22	87·30	82·66
Tin	0·11	11·77	10·34
Nickel	0·59	Trace	6·30
Lead	Nil.	0·31	Trace
Zinc	,,	0·09	0·03
Iron	0·10	Nil.	Nil.
Antimony	1·14	,,	,,
Arsenic	0·02	,,	,,
Sulphur	0·73	0·50	0·62
Totals	99·91	99·97	99·95

Professor Desch adds: 'The unusual feature is the presence of nickel, in one case in large quantity. I am informed that nickel is not found in the surface copper-ores of Wales; an ore containing nickel is known near Rhuddlan in Flintshire, but this ore does not contain copper. On the other hand, nickel does occur in the copper-

bronze was already known in the Near East some two thousand years before the introduction of metal-working into Britain,[1] it is not necessary to postulate a distinct Copper Age as the preliminary to the Age of Bronze in these islands. The absence of tin from certain early British and Irish metal implements is less likely to be due to ignorance of its utility than to initial difficulties in obtaining adequate supplies of this comparatively rare material.

The Welsh Bronze Age, therefore, begins with the first intrusion into the peninsula of a metal implement either of copper or actually of bronze. It may be said to have ended nominally with the arrival of the first stray implement of iron. Between these events, in Wales as in England, we may provisionally interpose a period of something like 1,500 years—say, 2000–500 B.C. At the one end of this period in Wales we have the Usk axe (Fig. 43, 1) and the Cowbridge knife (Fig. 51, 1) ; at the other, we have the iron axe of the Berwyn Hills (Fig. 82) and the iron sickle of Llynfawr (Fig. 81), which may indeed be a century or two earlier than the convenient terminal date here suggested. The products of the intervening centuries may, for the purpose of the present summary, be classified roughly in accordance with an abbreviated version of the scheme formulated by Montelius[2] and recently modified variously by Mr. J. G. Callander[3] and Dr. Cyril Fox.[4] The scarcity of early types in Wales enables us there to reduce the five periods of Montelius to three phases without undue compression ; but it is scarcely necessary to emphasize that a chronology such as that here utilized is little more than an arbitrary guide to the memory. The year 1500, chosen to divide the Early

ores of Kirkcudbright.' It also occurs sparingly, as Mr. Peake points out to me, in Cornwall. See J. D. Dana, *Mineralogy and Lithology*, 1885, p. 166.

[1] For a recent summary of the evidence, see H. J. E. Peake, *The Bronze Age and the Celtic World*, pp. 36 ff.

[2] *Arch.* xli. 97 ff. In detail this basic scheme has not met with general approval, but all subsequent schemes are necessarily built upon it.

[3] *Proc. Soc. Ant. Scot.* lvii (1922–3), pp. 123 ff.

[4] *The Archaeology of the Cambridge Region* (1923), pp. 16 ff.

from the Middle Phases, is the date adopted by Abercromby to mark the final submergence of the beaker culture in what may be called a more purely British Bronze-Age culture. This Middle Phase may have ended within a century or so of the year 1000, the approximate beginning of the Early Iron Age in Central Europe. The far-reaching economic and political readjustments which there accompanied the exploitation of the new material seem to have brought Continental bronze types, such as the leaf-shaped sword and perhaps the socketed axe, into these islands, and so to have produced the complex Late Bronze-Age culture which lasted with minor variations until the final triumph of Iron during the centuries immediately preceding the Roman conquest; perhaps, in remote parts of Wales, actually to the eve of this conquest.

PHASE I. *c.* 2000–1500 B.C. *Early Bronze Age*

Implements:
- (*a*) Flint knives, scrapers, barbed and tanged arrowheads.
- (*b*) Stone axe-hammers and maces.
- (*c*) Flat axes of copper and bronze, and axes with flanges but no stop-ridge.
- (*d*) Small knives of copper and bronze, generally flat but sometimes with slight central ridge.
- (*e*) Halberds.
- (*f*) Tanged spearheads.

Ornaments, &c.:
- (*a*) Gold lunulae.
- (*b*) Jet buttons and beads.

Pottery:
- (*a*) Beakers.
- (*b*) Earlier food-vessels.

PHASE II. *c.* 1500–1000 B.C. *Middle Bronze Age*

Implements:
- (*a*) Flanged axes with stops (palstaves).
- (*b*) Daggers and knives.
- (*c*) Rapiers.
- (*d*) Spearheads with loops on the socket.

Ornaments: Perhaps jet beads (Treiorworth).

Pottery: (*a*) Later food-vessels.
(*b*) Earlier cinerary urns and incense-cups.

PHASE III. *c.* 1000–500 B.C. (and later). *Late Bronze Age*

Implements:
(*a*) Later palstaves and socketed axes.
(*b*) Leaf-shaped swords and daggers.
(*c*) Socketed and S-shaped knives.
(*d*) Sword-chapes of various types.
(*e*) Spearheads either with loops in base of blade, or with lunate openings in the blade, or with simple blade and no loops; and ferrules.
(*f*) Tanged and socketed sickles.
(*g*) Saw.
(*h*) Socketed gouges.
(*i*) Chisels, 'trunnioned' and other types.
(*k*) Razors and tweezers.
(*l*) Mace-heads (?).
(*m*) Bronze shields and disks.

Ornaments:
(*a*) Gold torcs, armlets, and 'ear-rings'.
(*b*) Bronze penannular armlets with expanded terminals, and bronze wire bracelets.
(*c*) Amber and jet beads.

Pottery: Later cinerary urns and incense-cups.

The various groups—implements, ornaments, pottery, burials—may now be considered *seriatim*.

IMPLEMENTS

PHASE I. *Early Bronze Age*

(*a*) *Flint.* A finely worked pointed-oval knife of flint, 6·7 in. long, with a square-ended butt for binding to a handle, was found long ago with a vessel which seems to have been a beaker in a cairn at Llanelieu in southern Breconshire.[1] Another large knife was found with a beaker-burial on

[1] *Arch. Camb.* 1871, p. 327 (engraving). The objects are now lost.

Fig. 38. Pottery and flint implements from a tumulus at Ystradfellte, Brecon. ($\frac{1}{2}$)

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Merthyr Mawr Warren, Glamorgan.[1] A third, carefully notched for the binding of the handle (Fig. 38), was found with other flint implements at Ystradfellte, Breconshire, in a cairn which contained a burnt burial and fragments possibly of a food-vessel.[2] Knives of this type are well known from beaker-graves in England.[3]

To the same period belongs a tanged and barbed flint arrowhead found in a cist with a beaker at Dolygaer, near Merthyr Tydfil, Glamorgan.[4] There is no certain evidence that arrowheads of this type were used before the beaker-period, and we may conveniently therefore refer here to a number of flint and chalcedony arrowheads, possibly of Irish origin, found with flint flakes in the peat within a small area at Llyn Bugeilyn, in western Montgomeryshire (Fig. 39).[5]

The two finest examples of flint-working known from Wales belong either to this Phase or even to the beginning of the next, and remind us that, paradoxically, the art of flint-flaking reached its climax in Britain after the nominal beginning of the Bronze Age. These are two pointed knives, over 4 in. long, beautifully ripple-flaked to a razor-edge (Fig. 40). The first was found many years ago in a barrow at Bryn Bugeilyn near Llangollen in Denbighshire ;[6] it lay amongst burnt bones within an inverted urn of food-vessel or early cinerary type (see Fig. 72). One side of the knife has been slightly re-flaked anciently by a somewhat less skilful hand. The second knife was found in 1909 in a tumulus on Cadno Mountain, parish of Pendine, Carmarthenshire, with burnt bones and remains of what was thought to be a food-vessel.[7] Analogous implements have been found from time to time with inhumation and incineration burials in England,[8] but in no case is the workmanship of these two specimens surpassed. Other flint knives and

[1] *Arch. Camb.* 1919, p. 338.
[2] *Ib.*, 1898, p. 253.
[3] See R. A. Smith, *Proc. Soc. Ant.* (2nd series), xxxii. 6 ff.
[4] *Arch. Camb.* 1902, p. 25.
[5] See I. C. Peate in *Arch. Camb.* 1925.
[6] Badly figured in *Arch. Camb.* 1868, p. 248.
[7] *Ib.*, 1918, p. 47.
[8] Instances cited, *loc. cit.*

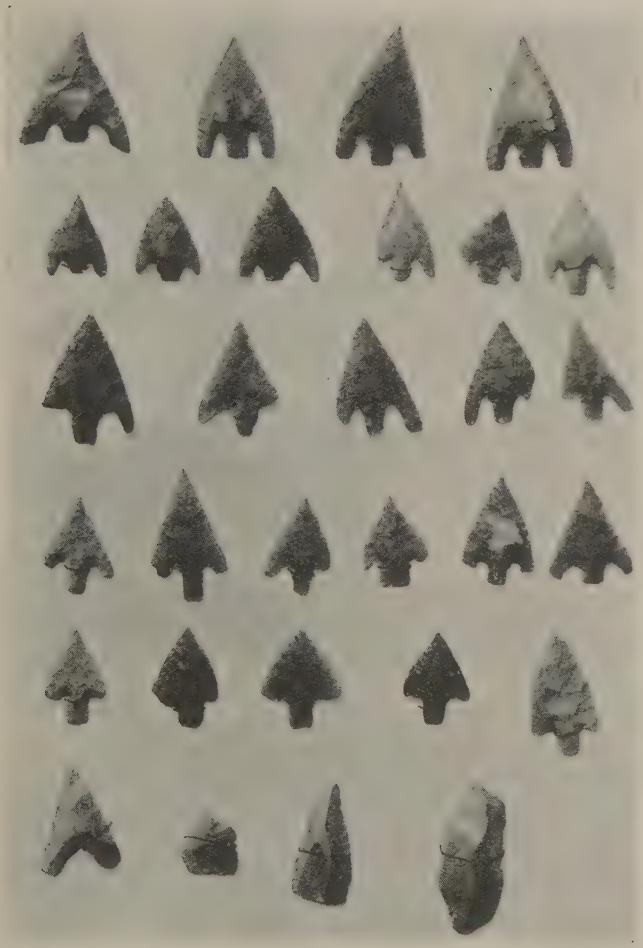

Fig. 39. Flint arrowheads found in the peat within a small area at Llyn Bugeilyn, Llanbrynmair, Mont. ($\frac{1}{2}$)

scrapers of this or similar period have been found in the same district,[1] at Garthbeibio in Montgomeryshire,[2] and elsewhere ; whilst nondescript or very slightly worked flint-

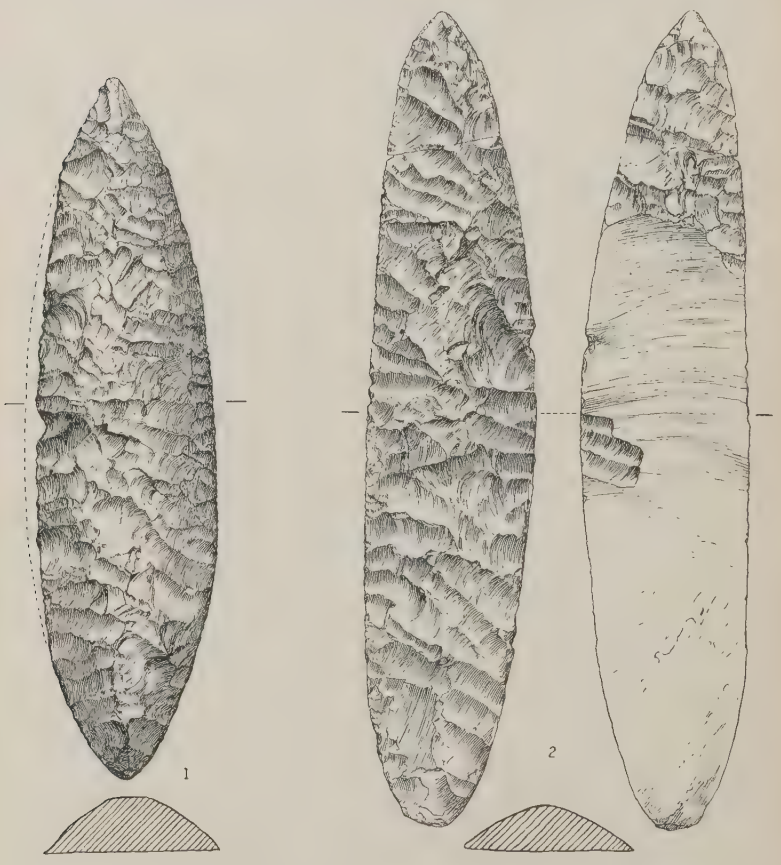

Fig. 40. Flint knives from Bronze-Age burials

1 With burnt bones in urn (Fig. 72) at Bryn Bugeilyn, Llangollen, Denb. 2 Cadno Mountain, Pendine, Carm. ($\frac{1}{1}$)

flakes are the rule rather than the exception in Bronze-Age burial mounds.

(*b*) *Stone-hammers and maces.* Stone-hammers, sharpened

[1] *Loc. cit.*, Fig. 3. [2] *Arch. Camb.* 1923, p. 286.

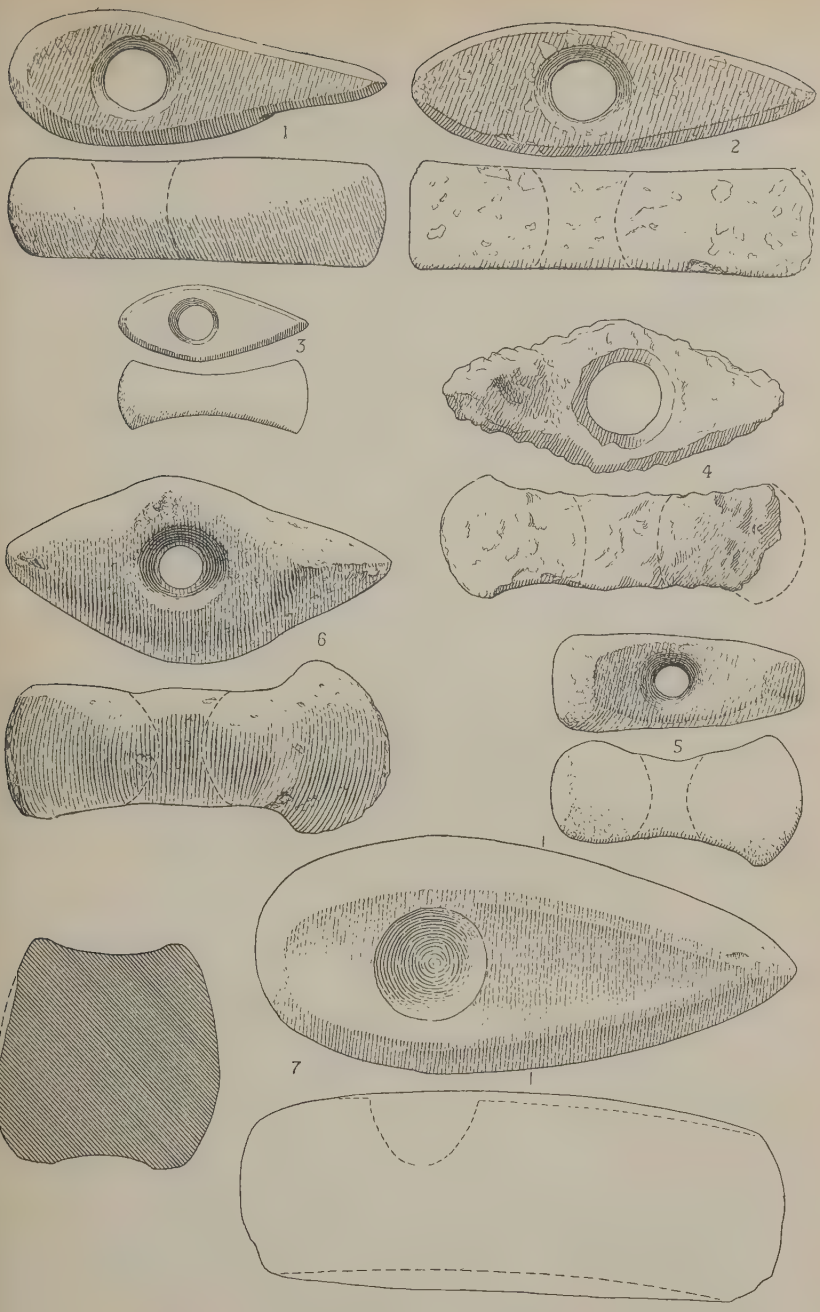

Fig. 41. Stone axe-hammers

1 Llanglydwen, Carm. 2 Trelech a'r Bettws, Carm. 3 Llanrhian, Pemb. 4 Llandawke, Carm. 5 Garthbeibio, Mont. 6 Llanmadoc, Gower. 7 Grondre, Cilymaenllwyd, Pemb. ($\frac{1}{3}$)

at one or occasionally both ends and pierced for the reception of the haft, are contemporary with the earlier part of the Bronze Age in this country. The evolution of the various forms is under dispute, and diametrically opposite interpretations of the typology have been proposed, but in view of the scarcity of Welsh types the discussion need not be reopened here.[1] The commonest and, according to Mr. R. A. Smith, the oldest form is that illustrated in Fig. 41, 1–2, both from Carmarthenshire; another has been found at Carno in Montgomeryshire and a third near Rhayader in Radnorshire.[2] This form accompanied a skeleton with a beaker and a bronze knife in a barrow at East Kennet, Wiltshire. It is derived by Mr. Smith from early copper prototypes in Hungary, on the supposition that these spread to Scandinavia where, during a prolonged Stone Age, they were copied in stone and so indirectly transmitted to Britain. No metal example is recorded from this country.

The upper and lower edges of this type are approximately parallel. Other types are 'dished' or definitely restricted in the middle. Whatever be the original relationship of these types with the simpler form, it seems certain that in Britain some of the former are later than some of the latter. A small axe-hammer of diabase found in a cist $4\frac{1}{2}$ ft. long at Llanrhian in Pembrokeshire (Fig. 41, 3) is almost too small for use, and may be purely symbolical or votive in character; with it were found apparently a spindle-whorl and 'very minute particles of a substance like bone', whether burnt is not stated.[3] Such a burial cannot be earlier than our Phase I, and the small axe-hammer may be transitional between the beaker-type and that next illustrated, from a cist 1 ft. wide and 6 ft. long at Garthbeibio in Montgomeryshire. Here a small axe-hammer was associated with the ashes of a boy, about nine years old,

[1] See Nils Aberg, *De Nordiska Stridsyxornas Typologi*; id., *Das Nordische Kulturgebiet in Mitteleuropa während der jüngeren Steinzeit*, pp. 23 ff.; R. A. Smith, *Proc. Prehist. Soc. East Anglia*, ii, pt. iv, pp. 496 ff.; id., *Antiquaries Journ.* i, Pt. 2, pp. 126 ff.

[2] *Arch. Camb.* 1911, p. 151.

[3] *Ib.*, 1903, pp. 224 ff.

and a knife, leaf-shaped arrowhead, and large scraper, all three of flint. In the mound, and perhaps contemporary with this burial, was a food-vessel (Fig. 71).[1] The axe is of a fine-grained igneous rock which is too soft to take a cutting-edge, but the general form is one which occurs in England in the food-vessel period and perhaps earlier. The Garthbeibio specimen shows the tendency to shape the butt into a circular or conoidal form which may be characteristic of the latest forms in the series.[2] A solitary example from

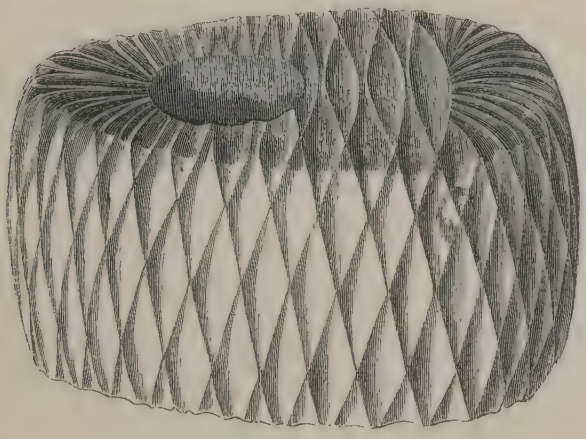

Fig. 42. Mace-head of chalcedony, from Maesmore, Merioneth.

Llanmadoc in Gower (Fig. 41, 6),[3] with nearly parallel upper and lower edges and an expanded cutting-edge, is noted by Evans as a Scandinavian or North German rather than a British type, and its position in the series is disputed. Indeed, in almost every case further associations are required to place the evolution of these types in Britain upon a

[1] *Ib.*, 1923, pp. 279 ff. [2] *Loc. cit.*, p. 289.

[3] J. D. Davies, *West Gower*, Pt. II, p. 59; Evans, *Stone Implements* (2nd ed.), p. 187. Evans states that the material is a felspathic ash; Professor Hubert Cox, however, prefers to regard it as 'a clay probably hardened by slight baking'. This diagnosis raises acute difficulties. The axe was found many years ago and is not likely to be a 'fake'.

satisfactory basis. Still less certain is the period of the large axe-hammers, such as Fig. 41, 7, which are fairly abundant and may often be of very much later age.

Here may be mentioned the remarkable ' mace-head ' of white chalcedony, found about 1840 on the Maesmore estate near Corwen, Merioneth, and now at Edinburgh (Fig. 42). It is 3 in. in length, has been bored from both sides, and is finely carved with sunk lozenges laboriously ground out of the hard material. The enormous time and patience and masterly skill which contributed to its manufacture suggest that it may have been an important ceremonial implement rather than one intended for ordinary use. Three others of similar material and design are known—from Sutherland, Elginshire, and Staffordshire [1]—and the pattern is identical with that on certain mace-heads or hammers of deer-horn which seem to be of the Early Bronze Age.[2]

(*c*) *Flat and flanged axes.* The earliest type of copper axe—a roughly shaped slab cast in an open mould [3]—is absent from Wales, where all the flat-axes exhibit in varying degree the squared section and expanding edge which mark the later stages of development.[4] In these respects the Usk axe (Fig. 43, 1) is more primitive than that from Dolwyddelan (Fig. 43, 3) ; in the latter the narrow shaft and spreading edge are late traits which are perpetuated in the succeeding flanged forms. The earlier flat-axes were probably mounted normally like stone axes in the cleft end of a straight haft, but others, such as Fig. 43, 2 from Merioneth, were certainly held in a forked ' walking-stick handle ' at right angles to the haft. The central thickening of the Merioneth axe is a partial

[1] J. Anderson, *Proc. Soc. Ant. Scot.* xliii (1908–9), pp. 377 ff.

[2] R. A. Smith, *Arch.* lxix. 6 ff. Montelius includes hammers of horn in Period I of his Bronze-Age chronology.

[3] e. g. *Proc. Soc. Ant. Scot.* lvii. 126.

[4] Here, as often, it must be remembered that most of the typological changes had been evolved on the Continent before the introduction of metal-working into the British Isles (see, e. g., H. J. E. Peake's note on the development of the Continental flat-axe in *The Bronze Age and the Celtic World*, p. 43 and Pl. 1). We must not therefore expect a close coincidence of typology and chronology in Britain, where ' early ' and ' late ' forms may have arrived side by side from different Continental sources.

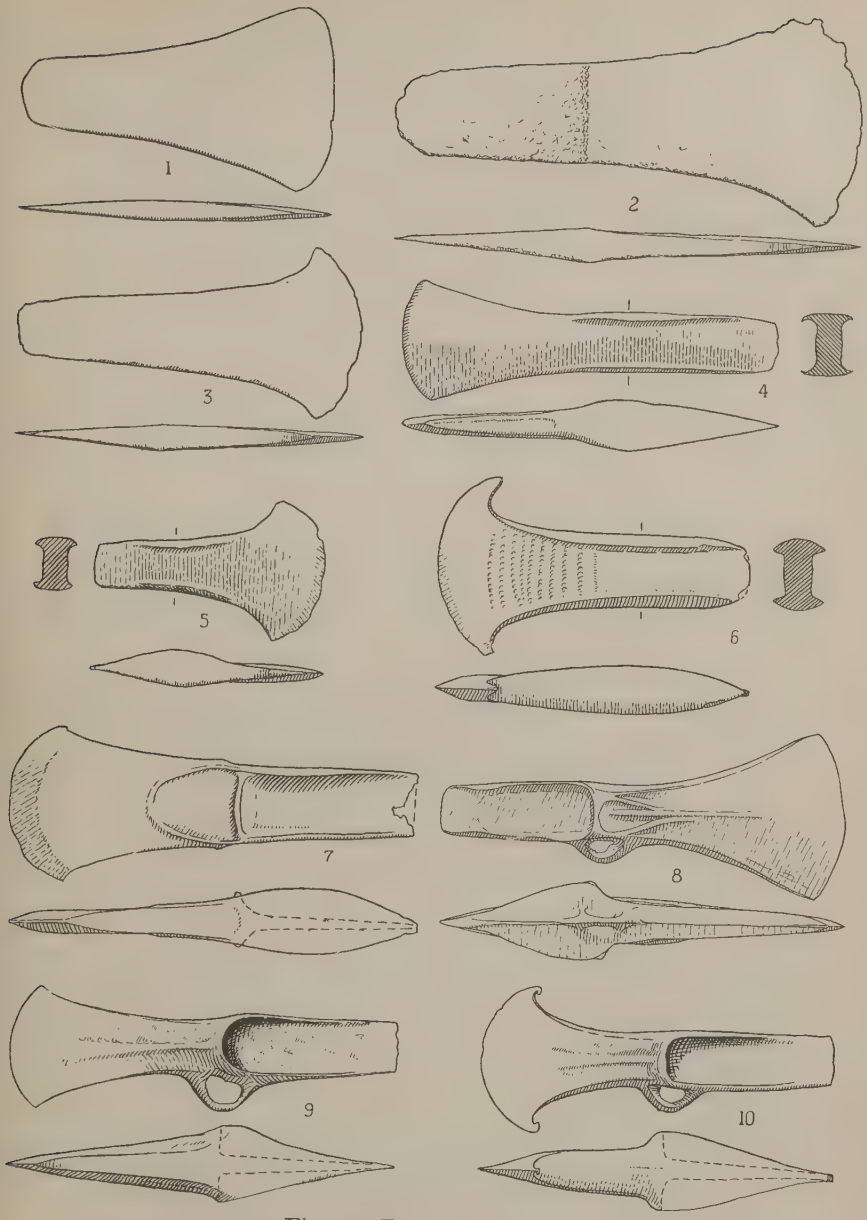

Fig. 43. Bronze axes ($\frac{1}{3}$)

1 Usk, Mon. 2 Cynwyd, Llangar, Merioneth. 3 Tan y Bwlch, Dolwyddelan, Carn. 4 Carnarvon. 5 Llanarmon Dyffryn Ceiriog, Denb. 6 Oswestry, Salop. 7 Drewgoed, near Llandderfel, Merioneth. 8 Llwyn On, near Merthyr Tydfil, Brecon. 9 Cenin Hill, Pantglas, Carn. 10 Penrhos, near Raglan, Mon.

anticipation of the stop which later came into vogue (Phase II).

In Wales upwards of a dozen flat-axes have been found: at Talwrn in Anglesey, at Llansantffraed and on Cefncoch near Dovey Junction in Cardiganshire, at Dolwyddelan in Carnarvonshire, at Brithdir (four) and Swansea in Glamorgan, at Cynwyd, Penrhyndeudraeth, and Llandderfel in Merioneth, at Usk and Newport (two) in Monmouthshire.[1] Others are from southern Carnarvonshire and (almost

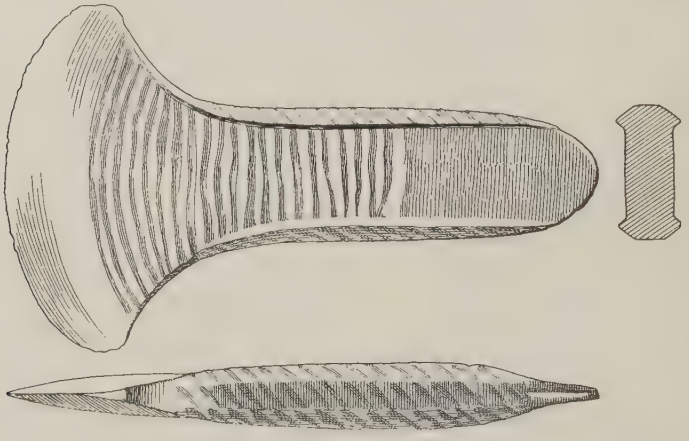

Fig. 44. Ornamented flanged axe, one of eight found together near the Menai Bridge, Ang. (½)

certainly) from Merionethshire, whilst yet another has been found just on the English side of the border at Castell Amlwg in the Clun valley. The four found together at Brithdir form the only hoard of this Phase from Wales.

The next landmark in the history of the bronze axe was the hammering-up of the edges to form a slight flange whereby additional rigidity was given to the mounting. No clear example of this brief transitional stage is recorded from Wales, but several examples are known in which this flange is embodied in the casting (Fig. 43, 5). The type had

[1] See *Bulletin of Celtic Studies*, i. 188. To these must be added a stone mould for casting flat-axes, found near Bettws-y-Coed.—*Arch. Camb.* 1924, p. 212.

a long life, however, since examples, long and narrow and used perhaps as chisels, occur in Phases II and III (Figs. 47, 2, 54, 2, and possibly 43, 4).

Flanged axes, especially in Ireland, are not infrequently ornamented, and a hoard of examples with flanges diagonally ribbed was found long ago near the Menai Bridge (Fig. 44).[1]

(*d*) *Knives.* The typical copper or bronze knife of the beaker-period is represented by Fig. 51, 1, a flat blade found

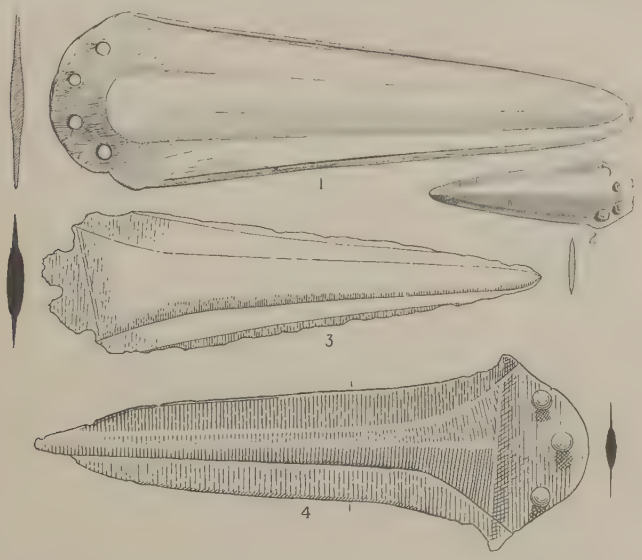

Fig. 45. 1 and 2 bronze halberd and knife said to have been found together at Wrexham, Denb. 3 halberd from Nevern, Pemb. 4 halberd from Pontrhydygroes, Card. (1/4)

with a skeleton at Cowbridge, Glamorgan. The handle, which fell to powder, was held by three rivets, and was characteristically shaped to receive them at the butt of the blade. Another knife, found at Hen dre'r Gelli in the Rhondda valley, may have been of the same period, but the type, like other early bronze forms, is rare in Wales. Other knives of even smaller and simpler character may in some cases be at least as early. Thus Fig. 51, 4, a thin leaf of metal

[1] *Arch. Camb.* 1877, p. 206.

3 in. long found in a tumulus at Llandrindod Wells,[1] is the most elementary metal form imaginable, and may be proportionately early. On the other hand, a blade only $2\frac{1}{2}$ in. long and with two instead of three rivet-holes but otherwise similar, was found near Tomen-y-mûr in Merioneth amongst the burnt bones contained by an urn of fully developed cinerary type.[2] These small knives were therefore certainly in use as late as the latter part of Phase II. Fig. 51, 3, found

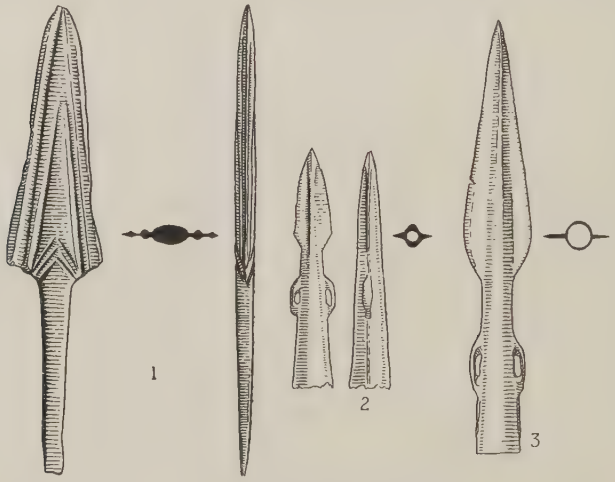

Fig. 46. Bronze spearheads

1 from Blaenrhondda, Glam. (Phase I). 2 from Lampeter, Card. (Phase II). 3 from Abermeurig, Card., found with 'incense-cup', Fig. 78, 2 (Phase II). ($\frac{1}{4}$)

in a cist at Candleston, Glamorgan, with a food-vessel,[3] may be placed on the border-line between Phases I and II.

(*e*) *Halberds.* Heavy blades, somewhat like large daggers but mounted at right angles to a long haft, are common in Ireland, whither they may have come from Spain.[4] Both in Ireland and in Scotland they seem to have been found with flat-axes, which show that they belong to the latter

[1] R. C. A. M., *Radnorshire Inventory*, 321.
[2] *Arch. Camb.* 1868, pp. 240–1.
[3] *Ib.* 1919, p. 328.
[4] G. Coffey, *The Bronze Age in Ireland*, p. 22

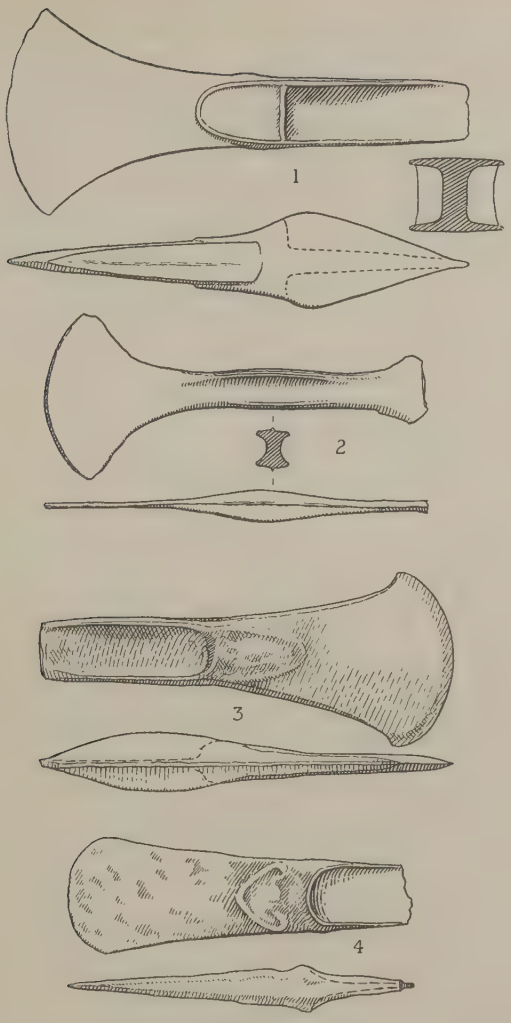

Fig. 47. 1, 3, and 4 bronze palstaves, showing the devolution of the ' shield ' pattern. 1 and 2 (chisel) part of the Acton Park hoard, near Wrexham, Denb. 3 probably from Radnorshire. 4 Cae Coed, Gwytherin, Denb. ($\frac{1}{3}$)

part of Phase I. Three examples have been found in Wales (Fig. 45); one at Nevern in Pembrokeshire, another at Pontrhydygroes in Cardiganshire, and the third near Wrexham in Denbighshire (now in the British Museum).[1] All these may well have come into Wales from Ireland.

(*f*) *Spearheads.* The earliest spearheads, like some early knives, were cast with a tang for insertion into the split end of the shaft. From this form, by the addition of a ferrule and the subsequent omission of the tang, was evolved the socketed spearhead of Phase II.[2] Of the primary type only one Welsh example appears to be known—from Blaenrhondda at the head of the Rhondda valley, Glamorgan (Fig. 46).

Phase II. *Middle Bronze Age*

(*a*) *Palstaves.* The tendency of both flat-axes and flanged axes to drive back into the cleft haft led to the introduction of a ridge or stop towards the front end of the flanges. The resultant type, known as the palstave, was dominant in the Middle Bronze Age and survived for a time into Phase III. Its typology has recently been well stated by Dr. Cyril Fox.[3]

Like other early types, the earliest form of palstave, in which the flange is still carried beyond the stop-ridge, thus emphasizing the fact that the latter is an intrusion, is rare in Wales. On the other hand, the derivative form, in which the front ends of the flanges devolve into an ornamental shield-shaped outline (Figs. 43, 7 and 47), is fairly abundant. Fig. 47, 4, a poor casting from Cae Coed, Gwytherin, Denbighshire, is an instructive example of the final disintegration of the type; here the shield-shaped ornament, its original significance now completely forgotten, has broken entirely away from the stop and has become an independent decoration on the side of the blade. This specimen probably belongs to Phase III.

A freak example of the 'shield' type found about 1850

[1] It is possible, however, that the halberd assigned to Wrexham was really found near Wroxeter in Shropshire.

[2] *Arch.* lxi. 439 ff.; *Brit. Mus. Bronze Age Guide* (1920), pp. 34 ff.

[3] *The Archaeology of the Cambridge Region*, pp. 55–6.

near Brynkir in Carnarvonshire had the sides of the central partition 'roughened' by a trellis-pattern carefully incised after casting.[1]

The type with shield-ornament is often found without a loop for supplementary attachment. This feature is normally present, however, on another form of palstave, in which the stop is strengthened by a central rib. The rib, emerging gradually from behind the blade, sometimes crosses two small divergent lines or ribs as it approaches the stop, thus forming the so-called trident-pattern (Fig. 43, 8). The

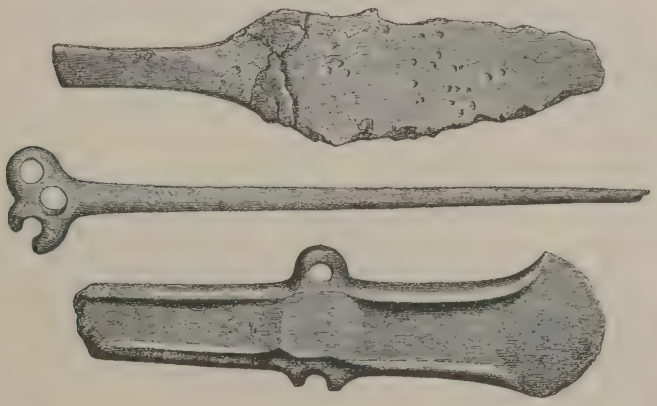

Fig. 48. Bronze knife or spearhead, pin, and double-looped flanged axe, from a burial at Bryn Crûg, Carn. (¾)

divergent lines are, like the shield-pattern of the other type, a reminiscence of the original ends of the flanges, but they are frequently absent (Fig. 43, 9–10). Certain late palstaves of Phase III (Figs. 56 and 57) have three parallel ribs on each side, but these have no structural value and are possibly influenced by the ornamental ribs of the socketed axes with which they are associated.

Probably to this Phase should be assigned an exceptional axe with two loops and flanges interrupted by a raised stop, broader and less sharply defined than the ordinary stop-

[1] *Arch. Camb.* 1871, p. 20, corrected in *Proc. Soc. Ant.* (2nd series), xxx. 178.

ridge (Fig. 48). This remarkable implement was found about 1855 ' with an interment and cinerary urns ' at Bryn Crûg, near Carnarvon, and was associated with a tanged bronze knife and a bronze pin with three piercings in a flat head.[1] It may be considered, with about ten double-looped palstaves found in Ireland and the south of England,[2] as

Fig. 49. Bronze implements from tumulus at Llanddyfnan, Ang. Found with burnt bones in an urn (Fig. 75, No. 7)

an indirect intrusion from Spain, where the double loop is frequently found both on palstaves and on socketed axes.

[1] *Arch. Journ.* xxv (1868), p. 246.

[2] On the double-looped type, see O. G. S. Crawford, *Proc. Soc. Ant.* (2nd series), xxiv (1911–12), pp. 44, 48. A stone mould for casting a *socketed* axe with two loops is recorded to have been found in western Anglesey between Bodwrdin and Tre Ddafydd (*Arch. Camb.* 1856, p. 126, Fig.) ; this type also is more at home in Spain than in north-western Europe. See Evans, *Bronze Implements*, p. 143.

Mention may also be made at this point of two unusual implements found with a knife-blade amongst the ashes contained by an inverted urn within a barrow at Llanddyfnan, Anglesey (Figs. 49 and 75, 7).[1] These are a small elongated flat-axe or chisel, twisted by heat, and a still more attenuated chisel of generally similar form. They were doubtless mounted in prolongation of the handle like the example from Everley, figured by Evans.[2] The type is rare in this country, and may be an intruder from south-western Europe.

(*b*) *Daggers and knives.* These grew longer and more massive as skill in bronze-casting increased, and daggers were now often 6 in. or more in length. Their outline is often slightly ogee-shaped, a feature suggested in the first instance by daggers which had gradually been worn to this shape by continual sharpening (Fig. 50); and the central rib was often emphasized by incised lines, as in Fig. 50, found with other implements close to the Welsh border at Ebnal, Shropshire (see below, p. 148).

(*c*) *Rapiers.* Increasing skill at last produced an elongated dagger or short, thin thrusting-sword, commonly known as the rapier. These weapons vary in length from about 7 in. to upwards of 2 ft. In Wales, examples have been found at Llansanwrn in Glamorgan (Fig. 53, 1), at Lampeter in Cardiganshire (Fig. 51, 6),[3] and near Maentwrog in Merioneth (Fig. 52).[4] The last 'find' was a hoard consisting of three rapiers and a spearhead with loops at the base of the blade—the only hoard of this Phase found actually within the borders of Wales.

(*d*) *Spearheads.* During this Phase the evolution of the spearhead proceeded rapidly, although several of the stages are not at present represented in Wales. The ferrule, which was added to prevent the tang of the earliest type from splitting the shaft on impact, was enlarged and amalgamated

[1] *Arch. Camb.* 1909, p. 321.
[2] *Bronze Implements*, p. 163.
[3] *Arch. Camb.* 1891, p. 236.
[4] *Proc. Soc. Ant.*, 2nd series, xxx (1917–18), p. 170.

with the blade, whilst the tang, thus rendered unnecessary, was omitted. The hoard found long ago at Ebnal, a few miles east of the Montgomeryshire-Shropshire border, included two daggers, three palstaves, and a looped spearhead which still retains a reminiscence of the original structural

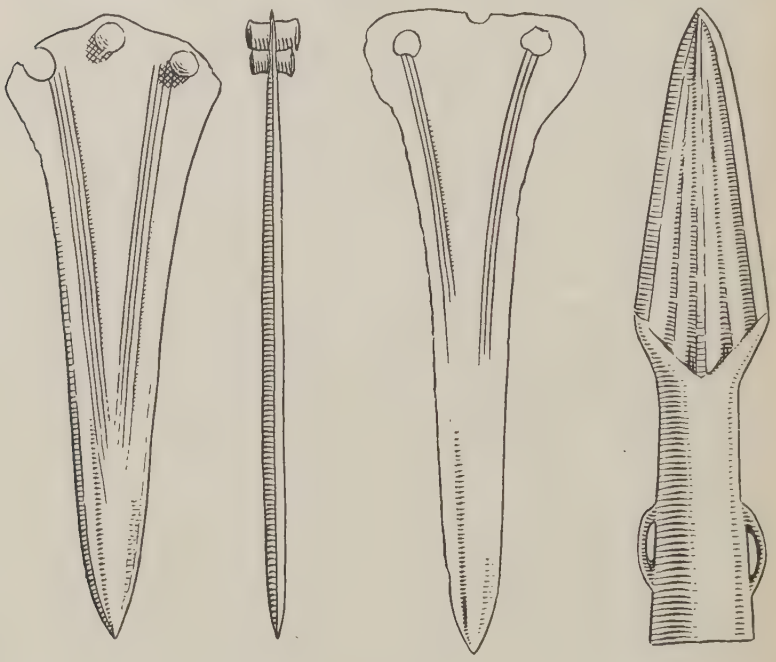

Fig. 50. Part of bronze hoard from Ebnal, Salop. (½)

division between blade and ferrule or socket (Fig. 50).[1] In the Welsh examples this division has invariably disappeared (Fig. 46, 2 and 3). The loops eventually, towards the end

[1] Fig. 50 is traced from a life-size water-colour drawing formerly at Peniarth, near Towyn. The dagger on the left, now in the Nat. Mus. Wales, is accurately depicted, so that the representation of the other objects, which are lost, may be accepted. For the hoard (or hoards), see *Arch. Journ.* vii (1850), p. 195; xxii. 167; *Proc. Soc. Ant.*, 2nd ser., iii. 65; *Horae Ferales*, Pl. V, p. 35; Evans, *Bronze Implements*, pp. 167, 174, 187, 466. I am indebted to Miss L. F. Chitty for assistance in regard to this hoard.

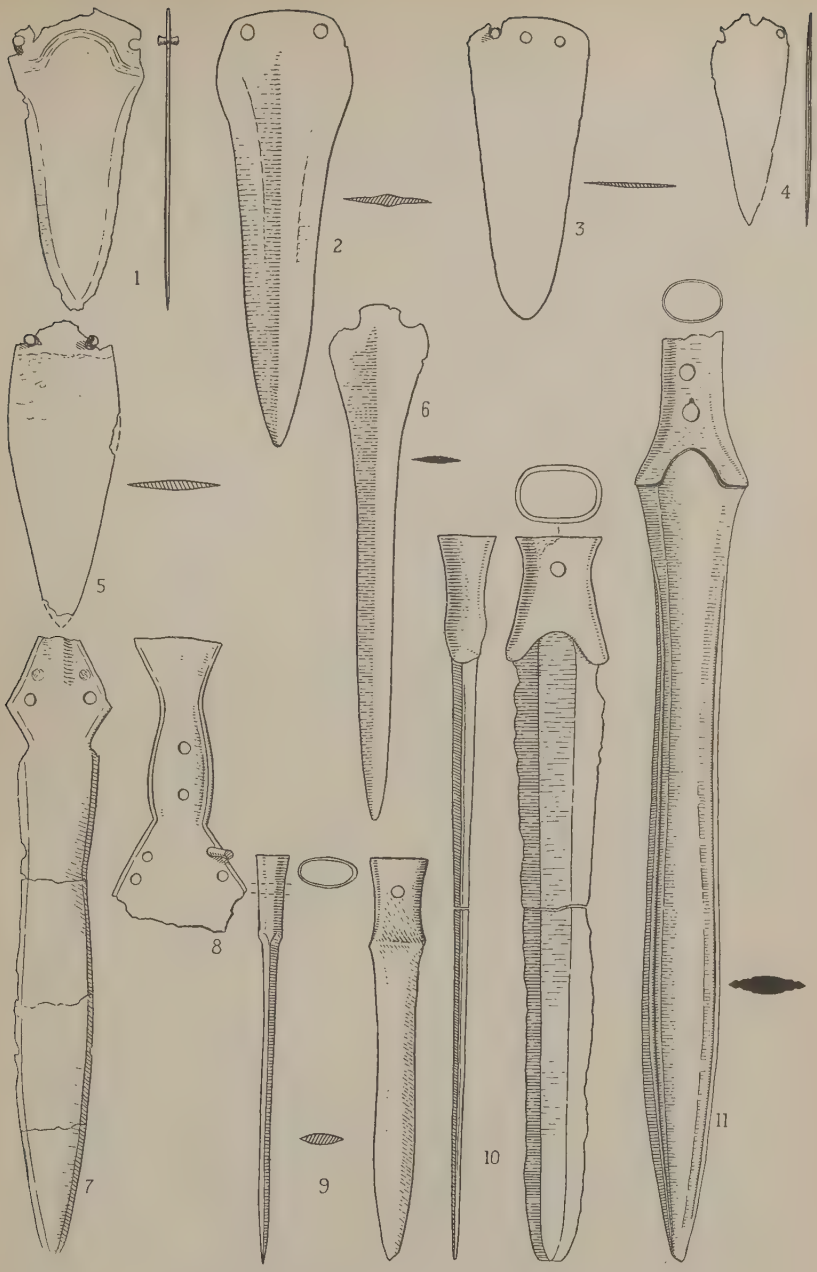

Fig. 51. Bronze knives and swords. ($\frac{1}{3}$)

1 Cowbridge, Glam. 2 Caerphilly, Glam. 3 Candleston, Glam. 4 Llandrindod, Rad. 5 Whitford, Flints. 6 Lampeter, Card. 7–8 from the Glancych hoard, Pemb.-Card. 9 Minera, Denb. 10 Llandinam, Mont. 11 'New Forest', Glam.

of Phase II, crept upwards to the base of the blade, as in the example found with the rapiers at Maentwrog (Fig. 52), or in a fine spearhead, 17 in. long, from Nebo, Denbighshire.[1]

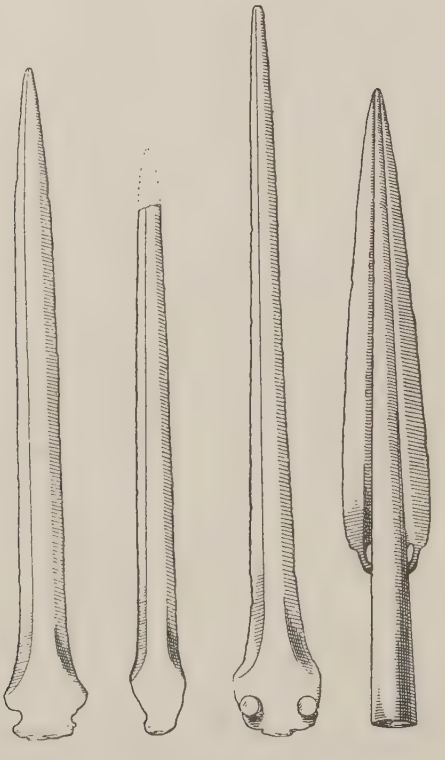

Fig. 52. Bronze hoard from Maentwrog, Merioneth. ($\frac{1}{4}$)

Phase III. *Late Bronze Age*

The third and last Phase is distinguished by many important changes, due doubtless to the arrival of new peoples—Celtic or other—from the Continent and to the incidental acceleration of trade and industry. Groups or hoards of

[1] W. Bezant Lowe, *Heart of Northern Wales*, p. 47, Fig. 34.

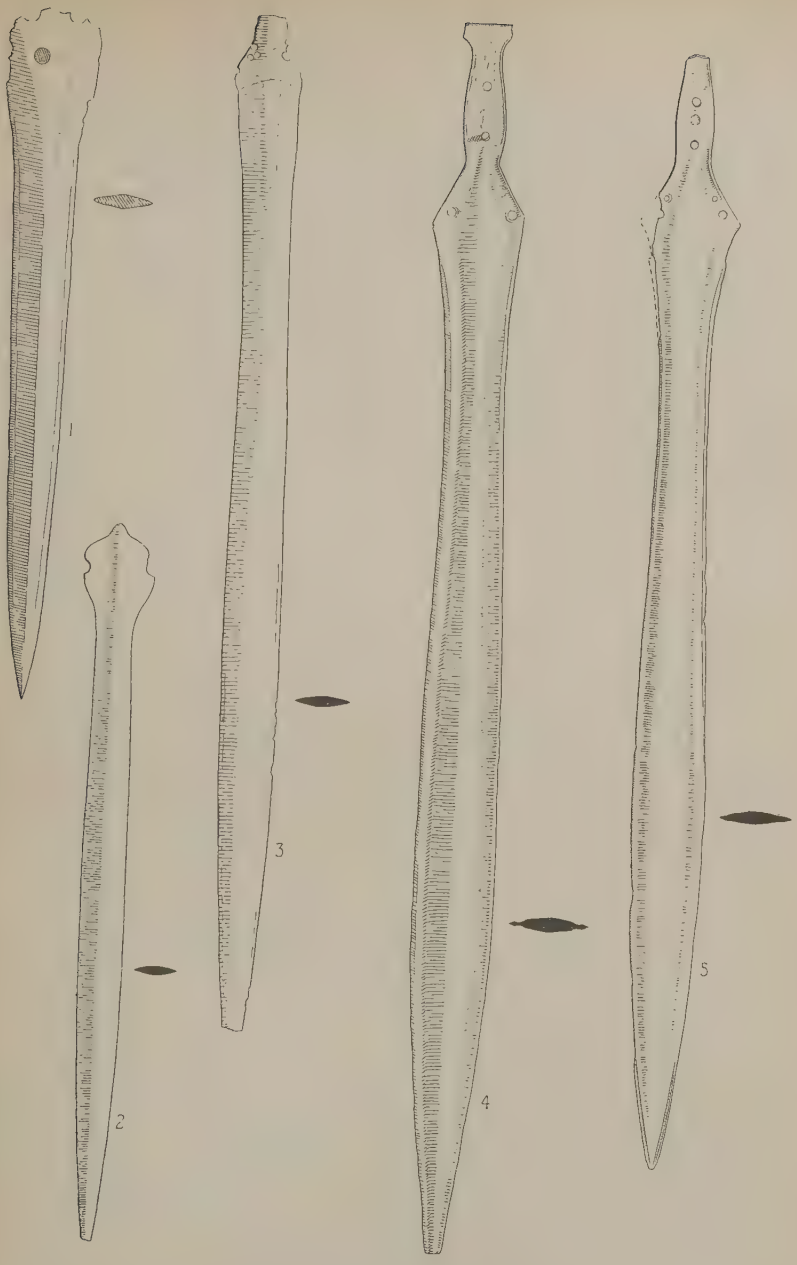

Fig. 53. Bronze swords. $(\frac{1}{4})$

1 City, Llansanwrn, Glam. 2 Nanmor, Beddgelert, Carn. 3 Cynwyl Elved, Carm. 4 Cwm Du, Brec. 5 Penrhyndeudraeth, Merioneth.

implements and ornaments now for the first time become numerous in all parts of the country ; in Wales, where only one small hoard can be allotted to each of the earlier phases, upwards of thirty belong to Phase III,[1] and in England a similar proportion, or dis-proportion, is observed. These hoards are normally isolated, i. e. they are not associated with dwelling-sites, and in many cases the inclusion of broken implements and other scrap-metal shows that they are the stock of itinerant craftsmen or pedlars whose wanderings had been unexpectedly interrupted. The sudden accession of hoards demonstrates on the one hand the swift development of the metal-working industry both in its technical and in its commercial aspects, and on the other hand testifies to an improvement in inland communications due partly to natural agencies. There is reason to suppose that during the second millennium B. C. changes of climate were accompanied by a partial deforestation of certain upland regions ; [2] and at the same time it is likely enough that some of the intruding peoples brought with them stronger and more centralized systems of government than had previously obtained in these islands. Both these changes may have combined to open up the country-side and to facilitate intercourse.

(*a*) *Later palstaves and socketed axes.* The latest types of palstave, with wide stop-ridges and sometimes with triple parallel lines which are influenced by the development of this motive on socketed axes, have already been noted (above, p. 145). Examples found with socketed axes are illustrated in Figures 56 and 57.

The socketed axe was evolved from the flanged axe by the gradual enlargement of the flanges and the ultimate omission of the central partition or septum. The transition seems to have taken place in Central Europe, where intermediary forms—the so-called winged axes—are common. These are rare in Britain save in the south-eastern counties ;

[1] *Bulletin of Celtic Studies*, i. 189, 287.
[2] See below, p. 281.

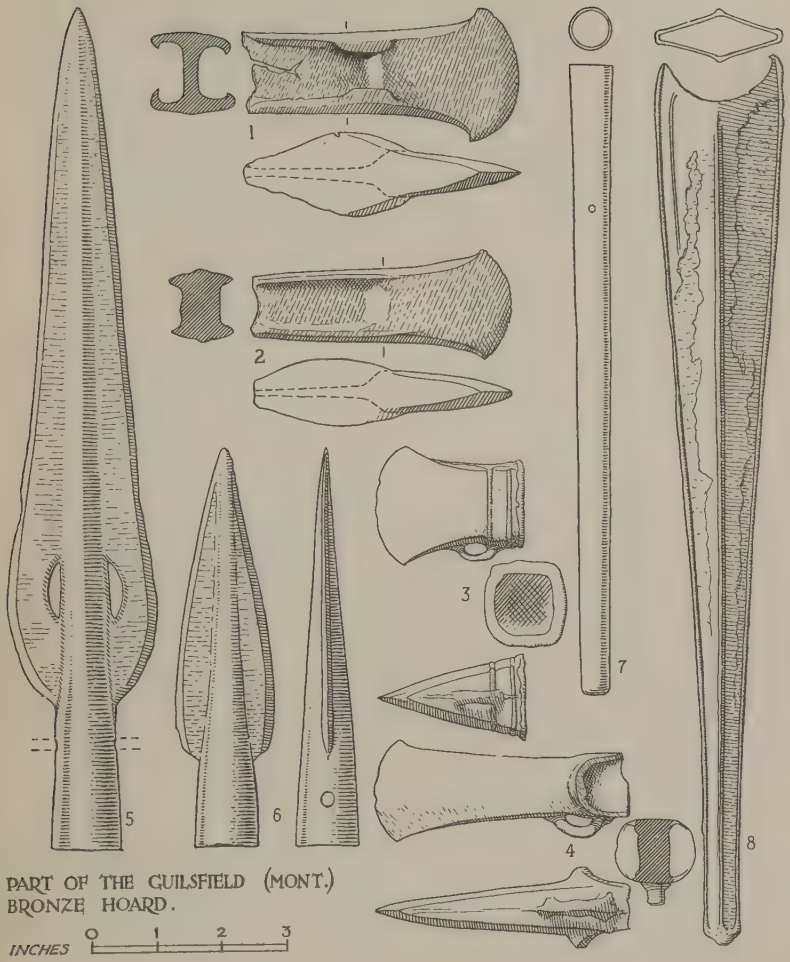

Fig. 54. $(\frac{1}{3})$

and in Wales neither the fully developed winged axe nor those early socketed axes which retain an ornamental imitation of the 'wings' upon the socket have yet been found. The tendency to develop 'wings' is manifest,

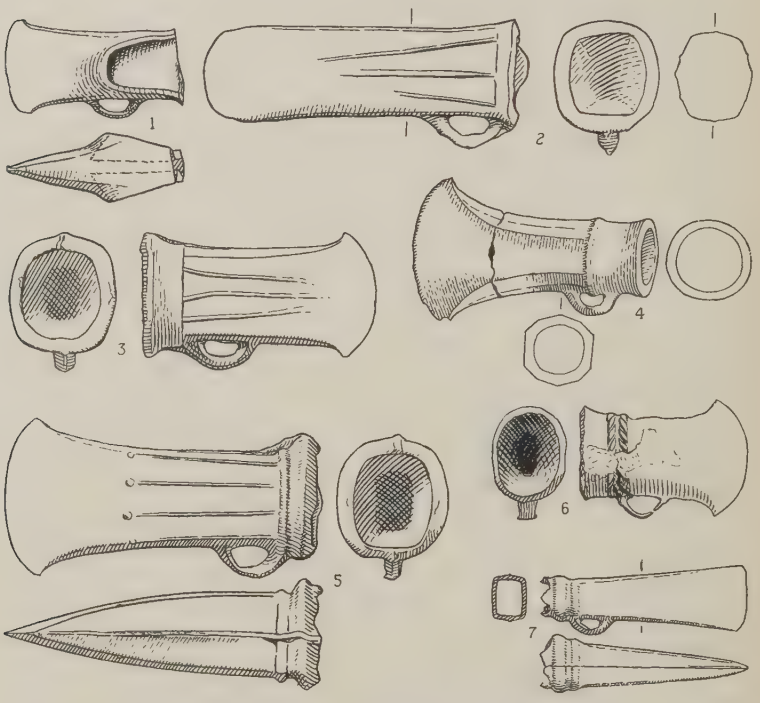

Fig. 55. Bronze palstave and socketed axes. (⅓)

1 probably North Wales. 2 Llanthony, Mon. 3 Llansaintffraed Cwmdauddwr, Rad. (part of hoard). 4 Carnarvon. 5 Crumlin, Mon. 6 Beaumaris, Ang. 7 Newton Nottage Down, Porthcawl, Glam.

however, in an implement—perhaps a chisel rather than an axe—in the great bronze hoard found at Guilsfield, Montgomeryshire (Fig. 54, 1). Another partial anticipation of the socket is illustrated by a curious little palstave, found probably in North Wales (Fig. 55, 1);[1] here, by reason

[1] From the Wynne collection at Peniarth, Merioneth, but not further identified.

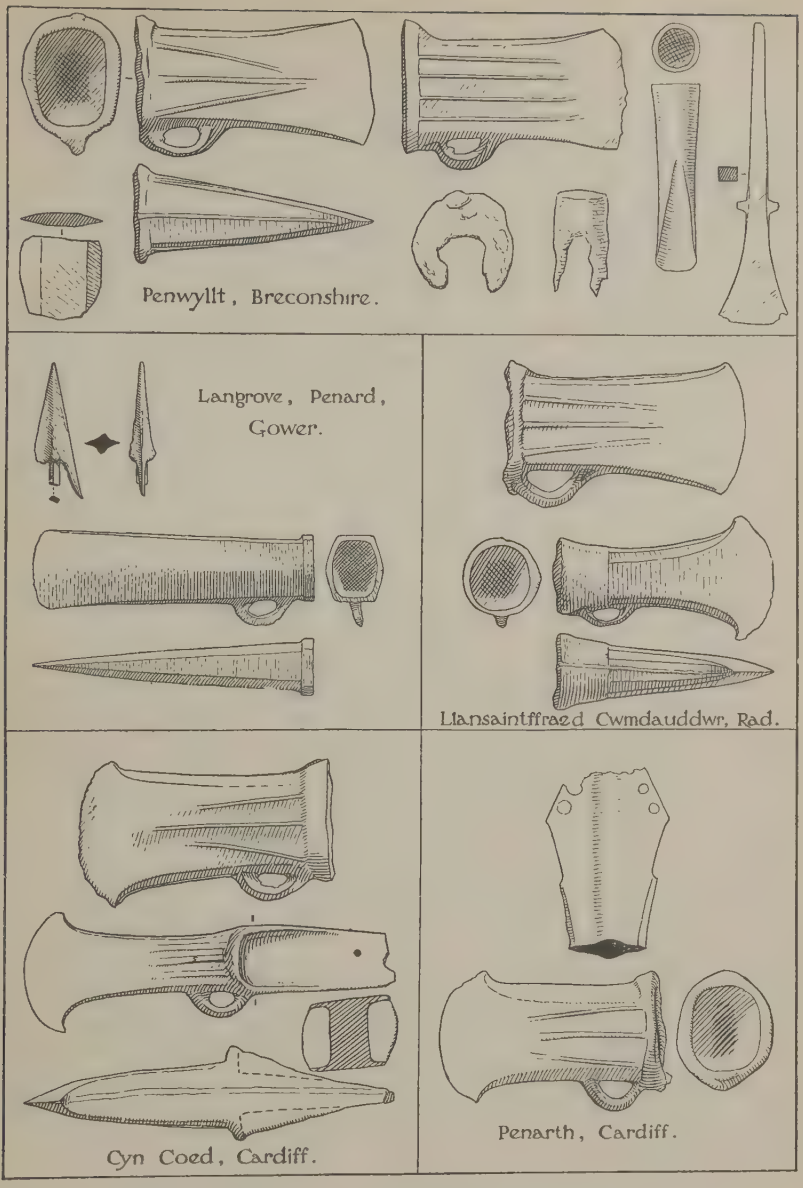

Fig. 56. Bronze hoards (representative pieces). ($\frac{1}{3}$)

of the shortness of the implement, the septum is prolonged towards the blade, so that the flange and stop-ridge form a sort of partial socket on each side of it. The form is a 'freak', however, and is not a true intermediary. The socketed axe arrived in Wales full grown, nor does it seem there to have undergone any significant evolutionary changes.

By far the commonest type in Wales, notably in the south-east, is the squarish axe ornamented on each side with three slightly converging ribs (Figs. 55, 2; 56; 57). It is possible that these ribs were ultimately derived from the 'trident' ornament of certain palstaves (above, p. 145). The general squareness of the socketed axe, however, tended to induce parallelism, for example, in the fine axe from Crumlin, Monmouthshire (Fig. 55, 5), and, as has been seen, the parallel lines found their way back to the latest palstaves. The Llantwit Major hoard (Fig. 57) illustrates all these stages. It would be premature, however, to emphasize this suggested sequence. When the illustrated catalogue of bronze implements now being prepared for the British Association is complete, it may be found that socketed axes fall rather into local groups than into any general typological sequence. If so, it may be possible to claim those ornamented with plain converging ribs as pre-eminently a South Wales type, although they are not confined entirely to that area. A preliminary survey shows that the type occurs in Monmouthshire on two sites (Llanthony and St. Mellon's), in Glamorgan on seven sites (Cardiff, Penarth, Porth, Creigiau, St. Fagan's, Llantwit Major, Cowbridge), and on one site in each of the counties Breconshire (Penwyllt), Pembrokeshire (Manordeify), Radnorshire (near Rhayader), and Denbighshire (Llandysilio). In England it is found almost exclusively in Somerset (three sites) and Cornwall (four sites), both counties which might naturally be expected to show contact with South Wales.[1]

[1] The sites in Somerset are Loxton Hill, Stogursey, and another not known; in Cornwall they are Falmouth, St. Just-in-Penwith, St. Kew, and an unknown.

Fig. 57. Part of bronze hoard from Llantwit Major, Glam.

Other Welsh examples call for less comment. A few suggest an Irish origin; one, from Beaumaris in Anglesey (Fig. 55, 6), is almost certainly from this source, the short, squat form and the forward position of the loop being distinctively Irish. Apart from a single example in the Guilsfield hoard, it is the only instance of the cable ornamentation from Wales, but the tendency to ornateness is characteristic of Irish bronze-work. Other examples are more reminiscent of Brittany. The small square-socketed axe from Newton Nottage Down, near Porthcawl, Glamorgan (Fig. 55, 7) is of a characteristic Brittany type which spread not infrequently to the southern counties of England; whilst the axe in the Langrove hoard from Gower has a similar squareness which, though modified by a slight structural ridge in the middle of each side, may also indicate an overseas origin.

(*b*) *Leaf-shaped swords.* To the thin thrusting-sword or rapier now succeeded, with comparative suddenness, the heavy cutting-sword with expanding or 'leaf-shaped' blade (Fig. 53, 4–5). The new type implies a totally different military tradition from the old, and an enhanced skill on the part of the craftsman. We are clearly dealing with an intrusive type; a rare intermediary form such as the very exceptional leaf-shaped rapier from Beddgelert (Fig. 53, 2) undoubtedly represents the occasional reaction of the one type on the other rather than a true transitional phase.

The leaf-shaped sword has recently been traced by Mr. Peake to an origin on the Hungarian Plain during the second millennium B. C. Mr. Peake distinguishes seven main types, lettered A to G and classified in accordance with the shape of the butt,[1] and taking as a central point an example from Egypt probably of Type D, which bears the name of Seti II (1209–1205 B. C.), he deduces an approximate chronology for the whole series. Allowing 75 years

[1] H. J. E. Peake, *The Bronze Age and the Celtic World* (1922), Pl. VI.

for each type, with 25 years overlap between successive types, his series begins at 1500 B. C. and ends at 875 B. C., with the proviso that the latest types survived some centuries longer in Britain. Without following Mr. Peake in all the details of his theory,[1] we may agree that the introduction of this sword in its middle and later stages (a few of Type D and many of Types E to G) into the British Isles was incidental to the arrival of new peoples and new cultures from the unsettled districts of central and west-central Europe—a humble counterpart of the contemporary invasions which in south-eastern Europe were beginning to mould the Hellenic world.

In Wales, leaf-shaped swords have been found on eleven sites: one at Cwm Du in Breconshire (Fig. 53, 4—Type E or F), another somewhere in the same county, apparently in a barrow[2] (if so, the only example of a leaf-shaped sword found with a burial), fragments of two or three in the Glancych hoard from the Cardiganshire-Pembrokeshire border (Fig. 51, 8—Type F), one at Cynwyl Elved in Carmarthenshire (Fig. 53, 3—Type E or F), one on Carnedd Llywelyn in Carnarvonshire (Type F), one at Dolwyddelan in the same county (Type D or E), one somewhere in Gla-

[1] Mr. Peake, noticing that the distribution of leaf-swords in Italy coincides approximately with that of Latin and kindred dialects of the 'Q' type, and that in Gaul the swords were dominant longest in the valley of the Sequana (Seine) which is one of the very few 'Q' names in France, ascribes to the leaf-sword people the diffusion of an ancestral 'Q' language throughout these regions from their original homes in Central Europe. In Italy this 'Q' language afterwards became Latin and in the British Isles it became Gaelic (the Goidelic or 'Q'-Celtic of Sir John Rhŷs's theory). A certain kinship between Latin and Gaelic has long been recognized, but it is for philologists to say whether, even in the absence of the stabilizing influence of writing, two languages in many respects so widely divergent are likely to have derived from a common stem in so short a period as the thousand years which followed the leaf-sword invasions (assigned by Mr. Peake roughly to 1500–1000 B. C.). True, it has been asserted on somewhat slender philological evidence that the subdivision of the parent Aryan tongue began not earlier than the first age of metal, the latter half of the third millennium B. C. (summary in A. Grenier, *Les Gaulois*, 1923, p. 29).

[2] *Brit. Arch. Assoc. Journ.* iii. 60.

morgan (Type F), one with a socketed axe at Penarth, Cardiff (Fig. 56—Type F), fragments of three with the Langrove hoard, Gower (variant of Type G), one at Penrhyndeudraeth in Merioneth (Fig. 53, 5—Type F), fragments of at least two with the Guilsfield hoard, Montgomeryshire (Type uncertain), and a fragment on Stackpole Warren, Pembrokeshire (Type E).[1] Mr. Peake's chronology would thus indicate the 12th century as the period of first invasion, but his estimate is perhaps too early for Britain, especially if, as has been suggested, we should regard the development of an active and antagonistic Iron-Age culture in central Europe as a contributory cause. The beginning of the European Iron Age can scarcely have been earlier than the end of the 11th century B. C.

(*c*) *Socketed and other knives.* Not included in the above list is a short leaf-shaped sword from Glamorgan (in the British Museum), with a socket instead of the usual tang for the attachment of the handle (Fig. 51, 11).[2] Socketed knives of analogous type are found in late deposits, as at Heathery Burn cave, County Durham, and in the hoard found in 1830 at Tŷ Mawr on Holyhead Island.[3] This hoard included spearheads of the latest bronze type, socketed axes, a chisel, rings, and amber beads. Another socketed knife, also in the British Museum, was found at Llandysilio, Denbighshire, with three socketed axes and a spearhead of late type. Fig. 51, 9–10, represents other socketed knives, from Minera in Denbighshire and Llandinam in Montgomeryshire.

Some of the shorter leaf-shaped swords, as one of those in the Glancych hoard (Fig. 51, 7), may be classed as daggers, and to the same category belongs a leaf-shaped dagger $7\frac{1}{2}$ in. long found at Brecon in 1882 with two palstaves, two

[1] For bibliography, see *Bulletin of Celtic Studies*, i. 344; ii. 91.

[2] This rare type occurs also at Royston in Cambridgeshire (Fox, *Archaeology of the Cambridge Region*, Pl. IX) but apparently not elsewhere in Britain.

[3] *Arch.* xxvi. 483; *Arch. Journ.* vi. 236; *Arch. Camb.* 1868, p. 389.

ferrules, and a knife with curvilinear blade also $7\frac{1}{2}$ in. long.[1] The curvilinear blade is rare in this country, but is found in the Swiss lake-dwellings.[2]

(*d*) *Sword-chapes.* The massive swords of the period encouraged the development of metal fittings for the leather scabbards in which doubtless they were normally carried. These fittings were generally confined to the lower end, and consist of ' chapes ' of various types (Figs. 54, 8 and 81). The latter, a distinctively Continental type found in Glamorgan with bronze and iron objects, will be discussed below (p. 202).

(*e*) *Spearheads and ferrules.* The characteristic spearhead of this Phase is a plain blade and socket with a transverse rivet-hole which now entirely replaces the loops of the preceding Phase. Sometimes the blade is lightened by a central lunate opening on each side of the socket. The plain and the lunate forms occur together in the Guilsfield hoard (Fig. 54, 5 and 6).

Cylindrical or slightly coned ferrules for the butt-ends of spear-shafts are included in the Glancych, Brecon, and Guilsfield hoards (Fig. 54, 7).

(*f*) *Sickles.* Bronze sickles have been found on three sites in Wales. A fragment of a tanged specimen is included in the Llantwit Major hoard (Fig. 57). Another, sharpened on both sides of the blade and with no definite tang but with a piercing at the base, was found near Brynkir, Carnarvonshire.[3] Two socketed bronze sickles, together with another of iron, form part of the remarkable Llynfawr hoard, discussed below (p. 202).

(*g*) *Saw.* To this or possibly to the preceding Phase should be assigned a bronze saw found with a chisel and a fragmentary palstave at the mouth of a cave on the shores of Milford Haven, Pembrokeshire (Fig. 58).[4] Bronze saws

[1] *Arch. Camb.* 1884, p. 225.
[2] *Brit. Mus. Bronze Age Guide* (1920), pp. 56, 121.
[3] *Proc. Soc. Ant.* (2nd series), xxx. 179.
[4] *Arch. Camb.* 1908, p. 114.

are rare in western Europe, but become more common towards the productive regions of the Hungarian Danube.[1] This seems to be the only certain specimen from Britain.

(*h*) *Gouges.* Bronze gouges are always socketed, and do not occur before the last phase of the Bronze Age. In Wales they have been found with the hoards from Llynfawr in Glamorgan and Penwyllt in Breconshire (Figs. 56 and 81).

(*i*) *Chisels*, on the other hand, are almost invariably tanged. They are included in the Tŷ Mawr (Holyhead) hoard and in that from Penwyllt (Fig. 56). The latter bears a general resemblance to certain larger implements with similar projections or ' trunnions ' midway along the two narrower sides (Fig. 59). Of these so-called ' trunnioned chisels ', two have been found in Wales—one at Talerddig in western Montgomeryshire, the other probably in Denbighshire—whilst a third has been found near the border, at Broxton about 11 miles south of Chester.[2] They may have been mounted as adzes, or possibly as chisels in prolongation of the haft, but differ from modern chisels in that their cutting-edge is central instead of lateral in regard to the wider plane of the implement. The type is rare in Britain, and seems to have originated in the Mediterranean basin, whence it spread on the one hand to Russia and on the other to Spain and so, probably, to the British Isles. Several have been found in Ireland and emphasize the close connexion of that island with western Europe in the Bronze Age. It is likely enough that the Welsh and Broxton examples are importations from Ireland. The general period of the type is indicated by the occurrence of *iron* examples at Hallstatt at the beginning of the Continental Iron Age.[3]

(*k*) *Razors and tweezers.* Amongst the innovations of the Late Bronze Age was the introduction from the Continent

[1] See R. Munro, *Prehistoric Problems*, pp. 338 ff.
[2] Evans, *Bronze Implements*, p. 169.
[3] Déchelette, *Manuel*, ii, Pt. 2, p. 793 ; and on the type generally see W. J. Hemp, *Antiquaries Journ.* v. 51.

Fig. 58. Bronze saw, chisel, and palstave, from Milford Haven, Pemb. (¾)

of various types of razor—prior to this period no special implement appears to have been devised for the purpose. Only three specimens, however, are recorded from Wales. One of these, of double-leaf type, was included in the Llangwyllog (Anglesey) hoard,[1] and a similar specimen, unpublished, has been found in a cave near Monmouth. The third, a crescentic type found on Continental sites of the

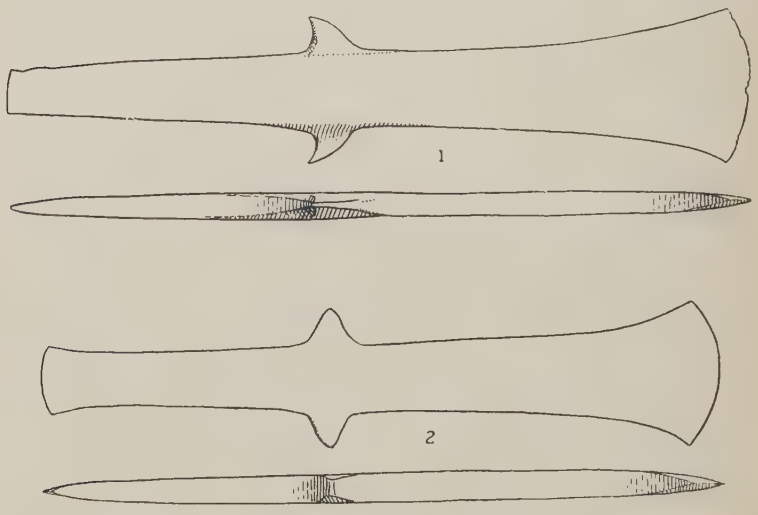

Fig. 59. Bronze ' trunnioned chisels ' or adzes

1 probably from Denbighshire. 2 from Talerddig, Montgomeryshire. (½)

Hallstatt Period but very rare in this country, is in the Llynfawr (Glamorgan) hoard ;[2] see below, p. 202.

With the Llangwyllog hoard is a pair of bronze tweezers, implements thought to have been used for plucking out hairs. Another occurs amongst the Late Bronze-Age objects found in the Heathery Burn cave, co. Durham, and others are found in the Swiss lake-dwellings and in Denmark, but the type is rare at so early a period. In the Early Iron Age and especially in Roman times it becomes abundant.

(*l*) *Mace-heads.* Bronze mace-heads may have originated

[1] *Arch. Camb.* 1866, p. 100. [2] *Arch.* lxxi. 133 ff.

in central or east-central Europe, whence they spread into most parts of the Continent. In Britain they are rare; Wales has produced a single example (Fig. 60), found on the Berwyn Hills near Corwen.[1] The date of these weapons is not beyond doubt, and some may even be as late as the Middle Ages. They are included in this section with all reserve.

(*m*) *Shields and disks.* Three bronze shields have been found in Wales—one on Moel Siabod, near Capel Curig, Carnarvonshire (Fig. 61); another near Harlech, in Merioneth; and the third near the mouth of the Dovey, Cardiganshire.[2] They are all of similar type, with central boss,

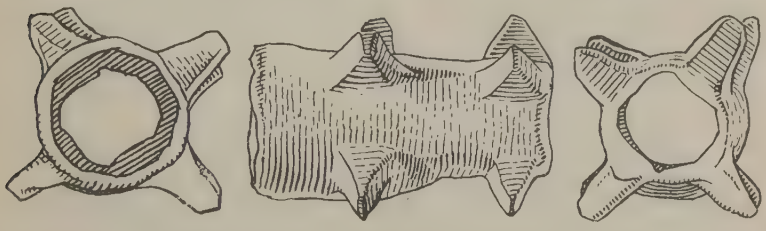

Fig. 60. Bronze mace-head from the Berwyn Mountains, Merioneth. (⅔)

concentric rings, and imitation rivets, beaten out from the back, and with attachments for a strap. Like other examples of their kind, the three were all found in peat-bogs, that at Harlech being buried vertically. In some cases two or more shields have been found together under similar circumstances, and the possibility that they may have been consigned to boggy or marshy land as a votive offering is worth consideration. Their date is suggested by the alleged occurrence of one in the Thames at Woolwich 'with a leaf-shaped sword',[3] and more surely by the finding of another with a spearhead with 'protected' loops (i. e. loops in the base of the blade) in Langwood Fen, Chatteris, Cambridge-

[1] *Arch. Camb.* 1876, p. 186.

[2] *Proc. Soc. Ant.* (2nd series), xxx. 169–70; R. C. A. M., *Merioneth Inventory*, 171 c; *Brit. Mus. Bronze Age Guide* (1920), p. 43.

[3] C. Roach Smith, *Cat. of the Mus. of London Antiquities* (1854), p. 80.

shire.[1] These associations, if of equal value, show that the type was in use at the end of Phase II and during Phase III.

Three bronze disks which may have been used as shield-bosses or as breast-ornaments are included in the Llynfawr (Glamorgan) hoard—see below, p. 202. Their use, however, is very uncertain.[2]

Arrowheads during the Bronze Age in north-western Europe were still normally of flint, but a single example of bronze is included in the hoard from Langrove in Gower (Fig. 56). This and another reported by Mrs. H. B. Cunnington from Salisbury Plain are the only bronze arrowheads known from Britain, and may both be strays from the direction of the Mediterranean.

ORNAMENTS, ETC.

Ornaments of the Bronze Age from Wales are few and may more conveniently be described in accordance with their material than in their strict chronological sequence. They are of gold, bronze, bone, jet, and amber.

(*a*) *Gold*

Ireland is known to every text-book of British prehistoric archaeology as the El Dorado of the ancient world. Certain it is that great masses of wrought gold have been found in Irish soil, and, in spite of the profusion of golden ornaments which glitters in the Irish saga-literature of the earlier Christian centuries, by far the greater number of the known objects of this metal from Ireland are now assigned to the Age of Bronze. The gold seems to have been obtained largely from co. Wicklow, and it may fairly be assumed that all the prehistoric goldsmith's work of Ireland is of native metal. The extreme rarity, however, of gold objects of Early Iron-Age character suggests that the supply of accessible metal was beginning to fail by that period, and,

[1] Cyril Fox, *The Archaeology of the Cambridge Region*, p. 60.
[2] *Arch.* lxxi. 135.

as a probable corollary, we find some evidence for the importation of gold into Ireland in early historic times. For a liberally illustrated account of the whole subject the student is referred to E. C. R. Armstrong's *Catalogue of Irish Gold Ornaments in the Collection of the Royal Irish Academy* (H.M. Stationery Office, 1920).

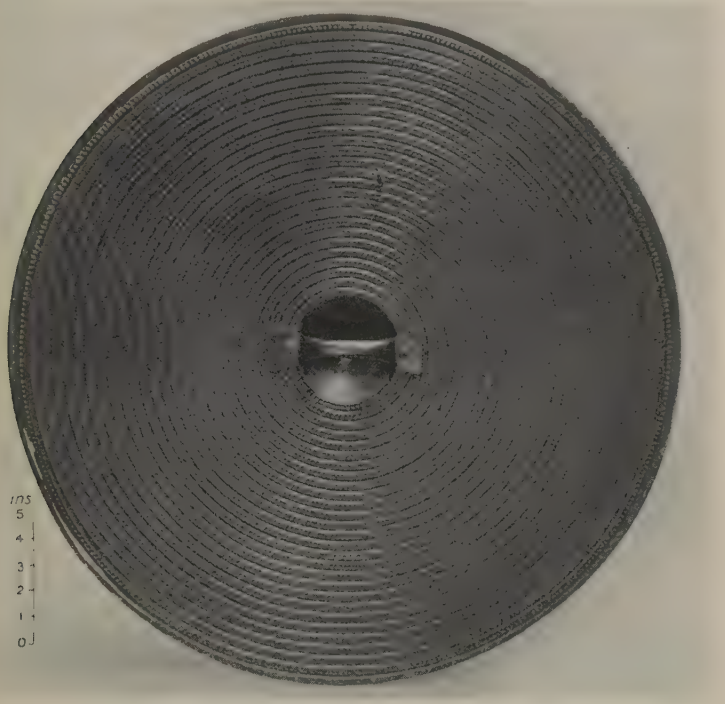

Fig. 61. Bronze shield from Moel Siabod, Carn.

In Wales, gold is still mined spasmodically in Merioneth and northern Carmarthenshire, and was worked in the latter region certainly in the Roman and possibly in the Norman period. There is no clear reason, however, to suppose that it was mined or washed in Wales during prehistoric times. Of some thirteen pre-Roman objects or hoards found in Wales most, if not all, may safely be regarded as importations

from Ireland. They fall into six main groups, and are as follows :

I. The crescent-shaped object of the type known as the *lunula*, found long ago in a bog near Llanllyfni, at the summit of the pass across the base of the Lleyn peninsula (Fig. 62).[1] It is characteristically decorated with finely incised geometric ornament towards the ends of the ' horns ', which, as usual, end in small transverse plates, apparently for attachment with a cord or chain.[2] It is natural to regard

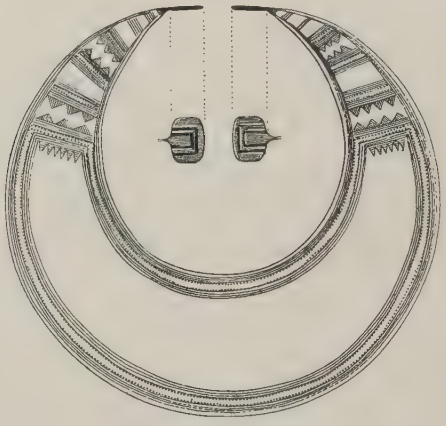

Fig. 62. Gold *lunula* from Llanllyfni, Carn. (½)

these objects as collars, but such a use would conceal most of the ornamented surface, and it has been suggested that they were votive objects, set up as a moon-symbol or as sacred horns, such as are found in the Aegean.[3] The discovery of two of them with a flat copper or bronze axe in Cornwall shows that they are of the Early Bronze Age.[4]

[1] W. J. Hemp, *Proc. Soc. Ant.* (2nd series), xxx. 177 ; *Brit. Mus. Bronze Age Guide* (1920), p. 93.

[2] A chain and buckle have been added to a lunula from France in ancient times.—Armstrong, p. 11.

[3] R. A. Smith, *Ant. Journ.* i. 131 ff.

[4] O. G. S. Crawford, *Ant. Journ.* i. 294. Another lunula was found in Donegal with a large flint arrowhead, and three more in Antrim during the removal of a dolmen-stone. These associations, however, add nothing to our evidence.

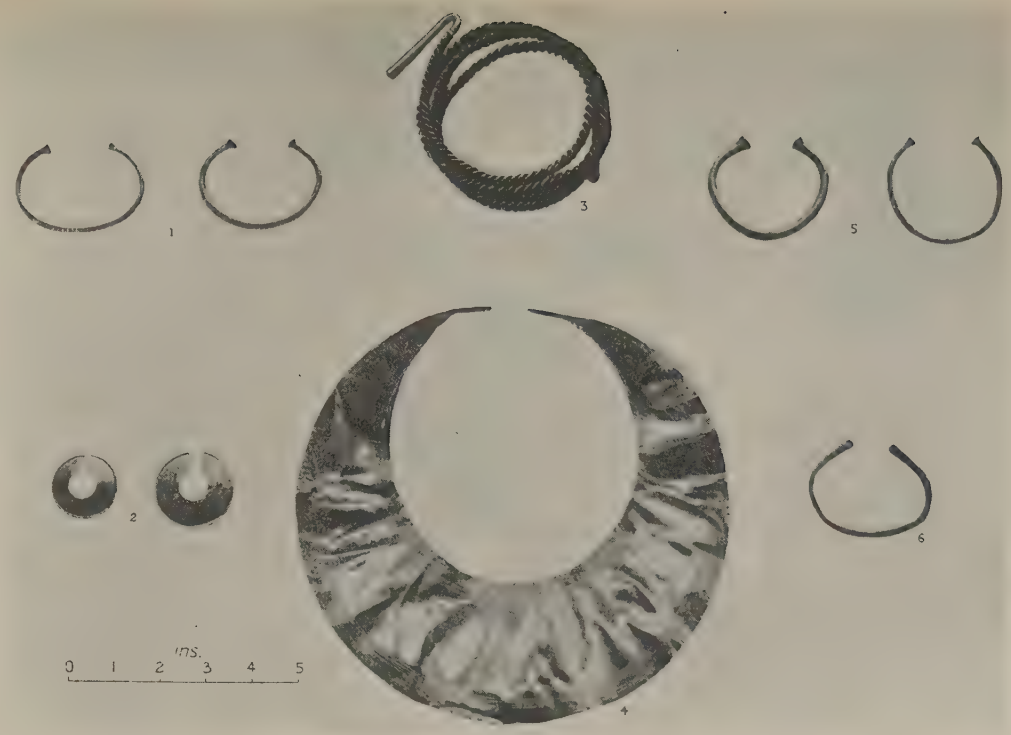

Fig. 63. Gold ornaments from Wales, in the British Museum

1 and 2 armlets and 'ear-pendants' from Gaerwen, Ang. (see Fig. 65). 3 torc from Glamorgan. 4 *ununla* from Llanllyfni, Carn. (see Fig. 62). 5 armlets from Beaumaris, Ang. 6 armlet from Llandyssul, Card.

The distribution of these peculiar and distinctive objects is well known as the most striking evidence for the scope and direction of Irish trade at this time. Of some sixty specimens, forty come from Ireland itself, one from Wales, four each from Scotland and England, nine or more from northern France and Belgium, two from Denmark, and one from Hanover.[1] The main lines of diffusion were clearly (*a*) northwards and eastwards via Scotland, and (*b*) south-eastwards via Cornwall and Brittany. Wales, between the two routes, seems occasionally to have served as a stepping-stone for one or other of them, but the main markets lay to the north-east, as it appears, for Baltic amber, and to the south perhaps for Cornish tin.

II. Wales has produced four gold *torcs* of characteristic Bronze-Age type. These are necklets, armlets, or waistbelts of twisted metal, normally with hooked or recurved terminals, which are of smooth metal and slightly expanded towards their outer ends. In weight they range from about 8 oz. to more than 24 oz., and they often measure from 1 to 1½ ft. in diameter. Their purpose is not clear. Some of them were wound spirally, doubtless for use as armlets, though the terminal hooks show that this was not the original intent. Others, not so wound, are almost too cumbrous for personal ornaments, and it has been suggested that they may sometimes have been used as girdles for large wooden idols.[2]

Gold torcs were in use during the latter part of the Bronze Age, and may have survived occasionally into the beginning of the Early Iron Age. A specimen was found in Cambridgeshire with three palstaves; another is said to have been discovered in 1812 at Mildenhall in Suffolk with a skeleton accompanied by a long *iron* sword and a 'celt' of unspecified material;[3] whilst a third, at Fresné-la-Mère, Calvedos, was associated with a bronze anvil, a socketed bronze hammer, a bronze spearhead, a bronze socketed

[1] Crawford, *Geographical Journ.* xl (1912), 304 ff.

[2] R. A. S. Macalister, *Proc. Roy. Irish Acad.* xxxiv, Sec. C, 255–6; Armstrong, p. 20.

[3] *Arch.* xxv. 609.

knife, and a bronze razor. The distribution of the torcs coincides closely with that of the lunulae, and, although a comparatively large number has been found outside Ireland, they are probably all of Wicklow gold. About thirty-five are known to have been found in Ireland, twenty in England, one each in Scotland and Jersey, ten in northern and one in central France. A single specimen, found in the second city of Troy, in Asia Minor, may possibly be a distant stray of the same series ;[1] it at least shows that the type was already known in the eastern Mediterranean in the last years of the third millennium B. C., i. e. about the beginning of the British Bronze Age. It is possible, therefore, that the earliest torcs in the British Isles were contemporary with the lunulae.

In Wales, of the four or possibly five torcs known to have been found none has come to light in recent years or under closely observed conditions. They are :

1. Found in Merioneth, ' very near to ' Harlech Castle.—Lhuyd in Gibson's *Camden*, 1695, col. 6 ; Pennant, *Tours*, 1, 17, 88, 266 (engraving) ; *Arch.* xiv. 95 ; xxvi. 464 ; Roy. Com. Anc. Mons., *Merionethshire Inventory*, 171 E. Weight about 9½ oz. Now at Mostyn Hall, Flintshire.

2. In the same county a similar torc was found in 1823 on the northern slope of Cader Idris, above Llyn Gwernan, in the parish of Brithdir.—*Arch.* xxi. 557–9 ; Roy. Com. Anc. Mons., *Merionethshire Inventory*, 33. Weight about 8½ oz. Now at Wynnstay.

3. In Flintshire, found apparently about a mile from Holywell, although the accounts differ.—*Arch.* xviii. 448 ; *Journ. Brit. Arch. Assoc.* v. 333 (figure) ; *Arch. Camb.* 1910, p. 181 ; Roy. Com. Anc. Mons., *Flintshire Inventory*, 309. Weight about 25 oz. Now at Eaton Hall, Cheshire.

4. From the common border of Glamorgan and Breconshire, in 1838 or earlier.—*Arch.* xxvi. 464 ; *Arch. Camb.* 1856, p. 136, note 8 ; Smith, *Dict. of Gk. and Rom. Antiquities*, s. v. ' Torques ' (figure). Weight 7½ oz. Now in the British

[1] Déchelette, *Manuel*, ii. 355.

Museum. [In the valuable list of gold torcs published by Mr. O. G. S. Crawford, *Proc. Soc. Ant.*, 2nd series, xxiv. 46, *two* Welsh torcs are assigned to the British Museum—one from Breconshire and the other from Glamorgan. Inquiries, in which I have been readily assisted by Mr. R. A. Smith, show that these are merely variant ascriptions of the one torc noted above. The somewhat divergent accounts of this torc are further complicated by the fact that when found it was a single circle, more or less as shown in Smith's *Dictionary*, whereas it is now in spiral form, as for an armlet. Mr. R. A. Smith has ascertained for me that ' it was bent into its present form after its acquisition by the British Museum, it having bends at that time which agreed with the restored form '.]

Another is said locally to have been found long ago in a mound somewhere between Cowbridge and Bridgend, in Glamorgan, and to have been melted down by a Cardiff jeweller. This may be another version of the story of the discovery of a golden helmet in this region,[1] and these stories may be inspired by the name ' golden mile ', which for several centuries has been applied to a strikingly straight stretch of the Roman road west of Cowbridge.

III. A third group of gold objects consists of plain penannular rings with expanded terminals, which are often solid though sometimes slightly cupped. These rings were doubtless armlets, but may also have been used as currency, although their weights do not fall readily into any consistent series.[2] They are found more commonly in Ireland than in Britain, and, like the torcs, they seem to belong to the latter part of the Bronze Age. In Clackmannanshire they apparently occurred with a cinerary urn of fully developed overhanging-rim type ; [3] in Elgin two were found with a socketed axe ; [4] and in co. Cork two others were associated also with socketed axes.

These rings are not infrequently found in groups, and

[1] *Arch. Camb.* 1856, p. 136, note 8.
[2] Smaller specimens may possibly have served as dress-fasteners.
[3] *Arch. Journ.* xiii. 407.
[4] Anderson, *Scot. in Pagan Times*, pp. 146–7.

four of the Welsh finds seem to have been of this nature. They are as follows :

1. At Gaerwen, in Anglesey, eleven armlets, each with an ornament which will be described separately below, were found in 1856.—*Arch. Journ.* xiii. 295. Two of the armlets and two of the associated ornaments are in the British Museum.

Fig. 64. Gold torc from Harlech

2. Pennant had in his collection ' three gold bracelets and a bulla ', found near Castell Crwm, in the parish of Llanfflewyn, Anglesey.—*Ib.*

3. Two bracelets with slightly cupped terminals have been found near Beaumaris, and are now in the British Museum.

4. At Bodfari, Flintshire, two were found in 1703. They were described by Lhuyd's correspondent as penannular gold rings with ' little swellings at the ends '.—Roy. Com. Anc. Mons., *Flints. Invent.*, 16.

5. At Cwrt, in the parish of Llanfynydd, Carmarthenshire, 'a gold ring for the arm, not joined, and with two balls at the ends', was found in 1876, apparently in an urn 'under a big stone'.—Roy. Com. Anc. Mons., *Carm. Invent.*, 419.

IV. One or perhaps both of the two Anglesey 'finds' noted above (1 and 2) included curious small penannular objects, the use of which is in doubt. They are bi-conical, and consist of two thin plates of gold conjoined with a central band; the interior is hollow. They sometimes seem to occur in pairs, and it has been conjectured that they may have been used as ear-rings, an attachment being fastened round the centre of the ornament through the openings in the side and hung on the ear of the wearer.[1] A more recent suggestion is that they were hair-ornaments.[2] Eleven of these objects (two of them now in the British Museum—Fig. 65) were found with the armlets at Gaerwen, and the 'bulla' found with three other armlets at Llanfflewyn, and recorded to have been in Pennant's collection, may well have been another of the same type. In Ireland, which is almost certainly their home, they occurred with gold torcs in the great Clare treasure; in Scotland, near Edinburgh, they were associated with a leaf-shaped bronze sword; and in co. Durham they were included in the Late Bronze-Age deposit from the Heathery Burn cave.[3] They are clearly, therefore, of Late Bronze-Age date. None is recorded from the Continent.

V. The gold ornaments hitherto considered may, with all reasonable assurance, be regarded as of Irish origin. Two other objects, both found in Flintshire, may have come from the same source, but no close analogies have yet been recorded from Ireland. The first of these objects is the small, oval, round-bottomed bowl, $7\frac{1}{2}$ in. long, with central width 4 in. and maximum depth 2 in., which was found in

[1] Armstrong, *op. cit.*, p. 39.
[2] Ludovic M. Mann, *Proc. Soc. Ant. Scot.* lvii. 316.
[3] For Bronze-Age gold ornaments from Scotland, see J. G. Callander, *Proc. Soc. Ant. Scot.* lvii. 161 ff.; and L. M. Mann, *ib.*, pp. 314 ff. For a general list of 'ear-rings', see *Ant. Journ.* v. 141.

1823 in a boggy field at Caergwrle, Flintshire, and is now in the National Museum of Wales (Fig. 66).[1] It is of black oak, and is partially ornamented with carved pattern and with incised gold leaf. The exterior of the rim is covered with a band of gold bearing originally upwards of twenty disks, each consisting of very finely tooled concentric circles. Below this are elongated triangular incisions filled with gold leaf with incised vertical lines. Below these again is a triple zigzag line also filled with gold leaf. At one end, and possibly originally at the other (now damaged), is a pair of incised circular ' eyes '. Lastly, along the keel of the bowl is a series

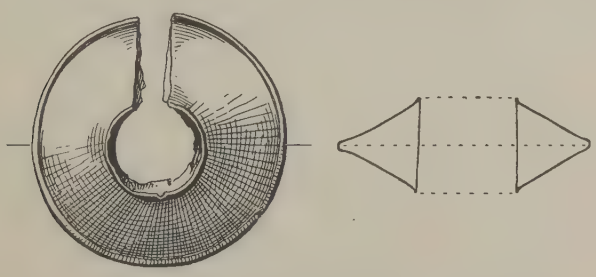

Fig. 65. Gold ornament from Gaerwen, Ang. (¾)

of transverse incisions. The elements of the ornamentation are of Late Bronze-Age type ; and the ensemble—the row of shields, the pendant oars, the eyes, and the zigzag waves—suggests a schematized boat. If so, a general analogy may be recognized in the small gold boats which were used in Ireland and in Scandinavia apparently for votive purposes. The boat found at Broighter in Londonderry[2] is similar in size to the Caergwrle bowl, but is realistically provided with benches and oars and lacks the decorative elements. About a hundred small boats of similar type, found at Nors in Jutland, were partially decorated with concentric circles or ' solar disks ' similar to those on the Caergwrle bowl.[3]

[1] *Arch.* xxi. 543 ; *Arch. Camb.* 1875, p. 286 ; Roy. Com. Anc. Mons., *Flintshire Inventory*, p. 143.
[2] Armstrong, *op. cit.*, p. 28.
[3] Déchelette, *Manuel*, ii. 424.

They were carefully buried in an urn, and were almost certainly a religious offering.

VI. Finally, the gold horse-peytrel found in 1833 at Mold in Flintshire is perhaps the most famous discovery of prehistoric gold-work in Britain (Fig. 67). The discovery was made by workmen levelling a cairn which was said locally to be haunted by a man in golden armour.[1] The peytrel appears to have lain in a cist-grave with an inhumation burial, and to have been accompanied by a large number of amber beads and the remains of coarse cloth which had formed a fringe to the peytrel. Traces of iron are also said to have been noticed, but are only vaguely recorded. Elsewhere in the cairn was found (and destroyed) an urn containing burnt bones.[2]

The peytrel is a trapping for the breast of a horse. It is elaborately ornamented with bands of circular, oval, and pyramidal bosses, of a type which has been compared with the decoration of the circular bronze bucklers that have been found in Wales and elsewhere, and apparently belong to the latter part of the Bronze Age (see above, p. 165). A somewhat similar ornamentation may be found on some of the Irish gold ' gorgets ', which are also thought to belong to this period.[3] The alleged association of iron with the burial is too vague to rank as evidence, but would be quite in keeping with the general character of the work. The whole burial has a special interest, not merely by reason of the wealth of gold and amber which it included,[4] but also from the fact that it is the only certain inhumation of the Late Bronze or Early Iron Age at present known from

[1] Boyd Dawkins, *Early Man in Britain*, p. 433; E. Sidney Hartland, *Ethnographical Survey of the United Kingdom*, p. 6.

[2] The various accounts are collected in Roy. Com. Anc. Mons., *Flints. Invent.*, p. 193.

[3] Armstrong, *op. cit.*, pp. 13–14.

[4] As the *British Museum Bronze Age Guide* remarks: ' A discovery of the kind demonstrates in a striking manner the abundance of gold at the end of our bronze period. It is obvious that before a warrior would decorate his horse with the precious metal, he had doubtless satisfied his own personal needs in this direction.'

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Fig. 66. Bowl of oak and gold from Caergwrle, Flints. (length $7\frac{1}{2}$ in.)

North Wales.[1] This fact, together with the obvious pride bestowed upon the horse, presents some analogy with the Early Iron-Age chariot-burials of the Yorkshire Wolds, and suggests the intrusion of a horse-loving people, which is more likely than not to have been a branch of those Celtic peoples whose horsemanship was famous in antiquity.

(*b*) *Bronze and Bone*

Bronze penannular bracelets (anklets, armlets, necklets) with expanded ends belong principally to Phase III, but are of a type which is widely spread both in space and in time. Nine of them were found together at Llanrhaiadr ym Mochnant, Montgomeryshire (Fig. 68), one (it is said) with pendants upon it.[2] Another, tapered at one end and expanded at the other, is included in the hoard from Tŷ Mawr, Holyhead. To the same late period belongs a simple bracelet consisting of a strand of wire bent double and hooked at the ends, from the Llangwyllog hoard, Anglesey ; an identical ornament was found in the Heathery Burn cave, together with plain bronze rings such as occur both in the Llangwyllog and Tŷ Mawr hoards. The Llangwyllog hoard also contains small bronze disks or buttons, and small rings perforated transversely for use as beads or as annular brooches.

Bronze pins have occasionally been recovered from cinerary urns in Wales, but have rarely, if ever, been preserved. One found in an urn near the Menai Bridge was ' about $3\frac{1}{2}$ in. in length, one end pointed, the other flat ',[3] a well-known type both in the British Isles and on the Continent. Another, from the urn at Bryn Crûg, near Carnarvon, which contained the double-looped axe (above, p. 146), had a head with three piercings (Fig. 48). These pins, like the bone needles which are also found sometimes

[1] There is no reason to suppose that the inhumation-burial found at Gelliniog Wen, Anglesey, with an iron sword was of prehistoric date.—*Arch. Camb.* 1909, p. 256.

[2] Evans, *Bronze Implements*, p. 380 ; R. C. A. M., *Mont. Inventory*, 653.

[3] *Arch. Camb.* 1868, p. 245.

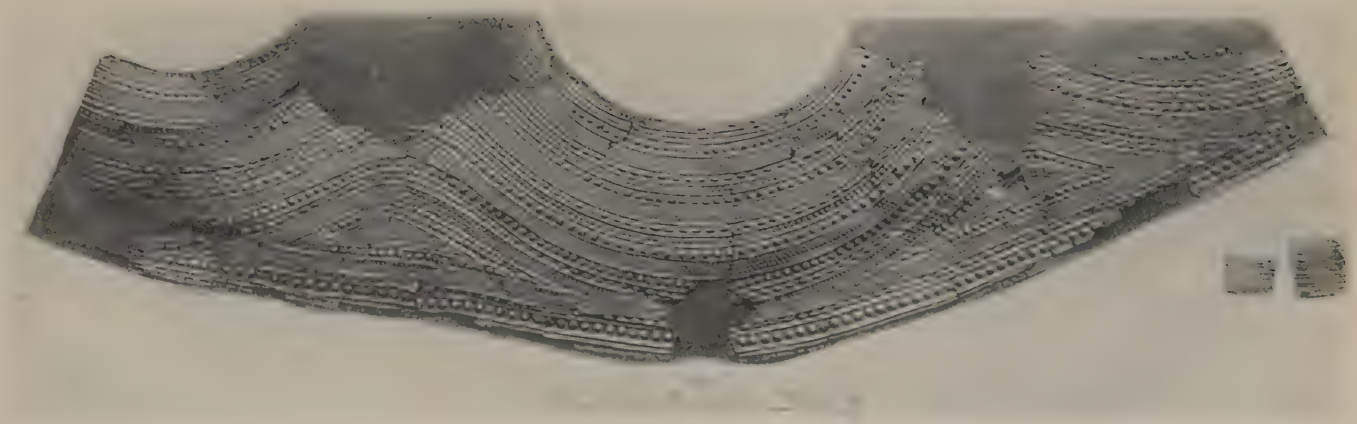

Fig. 67. Gold peytrel from Mold, Flints.

amongst the ashes in cinerary urns, may have fastened the cloth which originally contained the bones or covered the urn. A bone needle from an urn at Tredunnock, Monmouthshire, is here illustrated (Fig. 68), and another found long ago in an urn near Tomen-y-mûr, Merioneth, and described as of wood,[1] was probably also of bone.

(*c*) *Jet*

At Pen y Bonc on Holyhead Island in 1828 a cist about 3 ft. long, cut into the solid rock, was opened and found to contain two urns of unrecorded type, armlets of bronze, and beads and a button of jet.[2] The beads had formed a necklace of a type known from inhumation-burials in Derbyshire and elsewhere. The button is coned and has a V-shaped perforation, a type well known from graves of the Beaker-period (Bronze Age, Phase I), as at Pentraeth in Anglesey.[3] On the other hand a wedge-shaped jet bead found with the Llangwyllog hoard in the same county must be of Late Bronze-Age date (Phase III),[4] and in a tumulus at Treiorwerth on Holyhead Island a barrel-shaped bead of jet was unearthed near the fragments apparently of a cinerary urn.[5] It may be assumed that the jet was brought from east Yorkshire.

(*d*) *Amber*

Amber, either from the east coast of Britain or from the Baltic, was much prized during the Bronze Age, but there seem to be only five instances of its occurrence in Wales at this period. Eighteen circular beads of this material were found with the Llangwyllog hoard, and others were included in the Tŷ Mawr (Holyhead) hoard—both hoards of Phase III. In the British Museum are also nineteen amber beads found at Heneglwys in the same county; and a cairn at Mold, Flintshire, which is either of Late Bronze-Age or very early Iron-Age date, is said to have contained over three

[1] *Arch. Camb.* 1868, p. 242.
[2] *Ib.*, 1868, p. 423.
[3] *Ib.*, 1908, p. 214.
[4] *Ib.*, 1866, p. 109.
[5] *Ib.*, 1873, p. 196.

hundred such beads (see above, p. 176). In South Wales the only certain discovery is of two beads at St. Athan's, Glamorgan (Fig. 68). These, like the jet bead from Llangwyllog, are wedge-shaped in such a way as to fit closely into a necklace. The only other amber bead known to the present writer to have been found in Wales is a small specimen from the Roman fort at Caersws, Montgomeryshire, and was presumably in use in the Roman period.

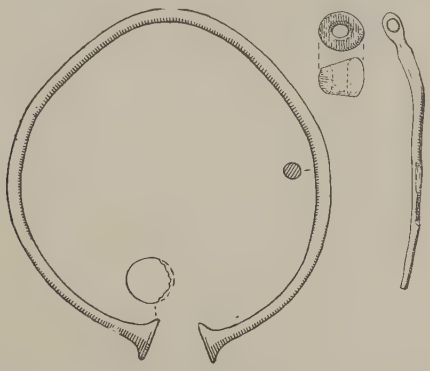

Fig. 68. Bronze armlet from Llanrhaiadr ym Mochnant, Mont.; amber bead from St. Athan's, Glam.; and bone needle found in a cinerary urn of 'overhanging-rim' type at Tredunnock, Mon. (⅓)

POTTERY

No dwelling-site of the Bronze Age has yet been recognized in Wales,[1] and, with one exception (below, p. 198), all the known pottery of this period has been recovered from burials. Those of the Beaker-period, corresponding with the greater part of our Phase I, have been described above; they consist normally of a stone cist containing a flexed skeleton, within a circular mound or cairn. Very rarely at this period the body is cremated, as, perhaps, in three badly recorded instances in Wales (above, p. 119). It was not

[1] The huts on Holyhead Island, ascribed to the Bronze Age in the *Brit. Mus. Bronze Age Guide* (1920), pp. 97–8, are of Romano-British period.—See *Cymmrod. Soc. Trans.* 1920–1, p. 72, footnote.

until the end of Phase I and the beginning of Phase II that cremation began generally to supersede inhumation in Britain, and the period of transition is marked by the final submergence of the Beaker-culture beneath a revived and developed native culture based partly upon old neolithic traditions. The characteristic pottery of the transition is the ' food-vessel ', which is found both with inhumation and with incineration burials. Relatively few food-vessels have been found in Wales, and the type, or rather group of types, may there have merged comparatively quickly into the ' cinerary urns ', which were derived from them. The earliest cinerary urns probably came into use soon after the beginning of Phase II, and mark the final replacement of inhumation by incineration. Later, perhaps about the middle of Phase II, small vessels known as ' pygmy cups ' or ' incense-cups ' were introduced. They frequently accompany cinerary urns, but, with an exception in Yorkshire [1] and doubtfully in Flintshire,[2] there is no record of the association of an incense-cup with a food-vessel.

The Bronze-Age burial-mounds of Wales are almost exclusively of the simple bowl-shaped form. The so-called ' bell ' shape, i. e. a mound surrounded by a ditch, occurs at Malldraeth in Anglesey [3] and near the large stone-circle on the eastern slopes of Penmaenmawr, but is very rare. The ' disk ' barrow is entirely absent. The material of the mound was either earth or stone or turves ; the last were used in a mound at Eglwys Bach, Flintshire, and in the ' Twmpath Diwlith ' and an adjacent mound on Margam Mountain, Glamorgan. The well-made cist-graves are usually of Phase I, but the cinerary urns of Phases II and III are sometimes roughly protected by slabs. We may here note the curious concentric arrangement of four cists of uncertain (but presumably Bronze-Age) date near Newport, Pembrokeshire.[4] No certain example of a ' flat

[1] Mortimer, *Forty Years Researches*, pp. 212–13.
[2] See below, p. 194 and Fig. 77.
[3] *Arch. Camb.* 1865, p. 196.
[4] *Ib.* 1872, p. 81, and 1922, p. 493. A somewhat similar circle of cists occurs on Mule Hill in the Isle of Man.

cemetery' (burials without a mound) of the Bronze Age is known from Wales.

The Welsh beakers have been discussed above; it remains to consider successively the three later groups—food-vessels, cinerary urns, and incense-cups. The ornamentation is almost invariably rectilinear (one exception is illustrated, Fig. 74), and is formed either by roughly graved lines, by impressions of twisted or plaited cord, or by impressions from a blunt or pointed instrument or from the finger-nail. The cogged stamp which was frequently used by the beaker-makers is now rare. Occasionally the pattern

Fig. 69. Food-vessels from a tumulus at Templeton, Pemb. (⅓)

is formed in relief by the application of strips or lumps of clay.

Food-vessels. The few recorded examples of this class from Wales fall into four main groups:

I. Globular vessels of small size (Abercromby's Hibernian Type A).

The only certain example (Fig. 69) comes from a mound at Templeton in south-eastern Pembrokeshire, but the details of the discovery are not known. It is 4 in. high and poorly decorated with more or less haphazard lines, some of which form rough triangle-patterns. The lines are impressed from a cord wound round a thin stick (the so-called 'maggot' pattern).

The type is at home in Ulster and Leinster, where it developed from small, nearly round-bottomed bowls of late neolithic period.[1] In modified forms it had a long life, and spread scantily to northern Britain. Its occurrence in Pembrokeshire may be attributed to influence from Ireland (see below, p. 286).

Fig. 70. Food-vessel from Tenby. ($\frac{3}{4}$)

II. Vessels with horizontal grooves (Abercromby's Hibernian Type C); derived from the previous type. This type is practically confined to Ireland, but is rare even there. In Wales it occurs at Templeton (Fig. 69) in the same mound and perhaps in actual association with the preceding example. The horizontal ribs are notched with a blunt-pointed instrument, and the hollows and rim show roughly smoothed oblique lines. The closest analogy is a vessel

[1] Abercromby, i. 121, &c. The type seems to have occurred in Irish megalithic graves.

found in the cairn at Mt. Stewart, co. Down, that yielded one of the three Irish beakers.[1]

III. A third type (Abercromby's type 1*a*) differs entirely from I and II, but like them is primarily characteristic of Ireland. The only Welsh example (Fig. 70) is biconical, with a raised moulding round the rim and a central groove interrupted by two imperforate lugs (Abercromby's type 1*a*). It is from a mound near Tenby, Pembrokeshire;[2] but again the precise conditions of discovery are uncertain. The vessel is 4 in. high, and is elaborately decorated with 'scored and impressed work, with bands also of zigzag ornament that seem to have been tooled out with more than usual skill. There are also markings within the lips.' Abercromby notes that it 'is so much like Hibernian examples that it may well have come from the Emerald Isle'. With the exception of this example (now lost), the type seems to be entirely absent from central or southern Britain.

IV. A more numerous type has the lower part shaped like an inverted, truncated cone, whilst the neck is concave and terminates at the lip, which is sometimes moulded and generally bevelled on the inside (Abercromby's type 3). Sometimes, though very rarely in Wales, the neck is bounded and subdivided by raised mouldings (Abercromby's type 2). The two variations are obviously interrelated, but though both Lord Abercromby and Mr. Reginald Smith[3] derive the former's type 2 from his Hibernian type A, his simpler type 3 seems to be unknown in Ireland. The simpler form, which is apparently somewhat the later, may thus be regarded as a peculiarly British development. In Wales it is found at Garthbeibio in Montgomeryshire (Fig. 71),[4] at Kerry in the same county,[5] and at Candleston in Glamorgan.[6] An example from Tenby, with horizontal swelling on the neck, is possibly an intermediary form between Abercromby's two

[1] Abercromby, i. 126, and Fig. 234.
[2] *Arch. Camb.* 1868, p. 266; Abercromby, i. 115, foot-note 3.
[3] *Arch.* lxii. 348 ff.
[4] *Arch. Camb.* 1923, p. 279.
[5] *Ib.*, 1913, p. 438.
[6] *Ib.*, 1919, p. 329.

types.[1] The Candleston burial presents unusual features. The mound or cairn contained an irregularly oblong cist 5 ft. in length, covered by a single slab. On the floor of the cist were found a few fragments of burnt bone, a bronze knife-blade 4–6 in. long with three rivets (Fig. 51, 3), a heap of snail-shells, and the food-vessel. The extent of the grave and the position of the knife suggest an inhumation-

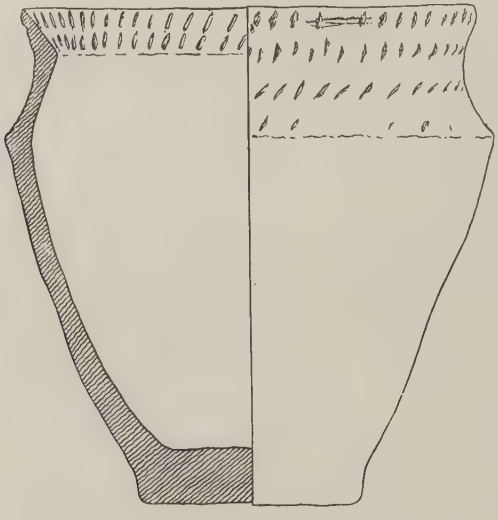

Fig. 71. Food-vessel from Garthbeibio, Mont. (¼)

burial, but none was found, and long graves for incineration burials occasionally occur in the food-vessel period.[2]

Though few in number, the Welsh food-vessels thus contribute materially to our knowledge of some of the sources of cultural influence in Wales during the first part of the Bronze Age. Already in the south-west we find a hint of that Irish influence which was to play an increasingly greater part some two millennia later; whilst the more easterly districts, both in the north and the south,

[1] *Arch. Camb.* 1868, p. 266.
[2] Cf. the Garthbeibio burial, *ib.* 1923, p. 290.

develop naturally in conformity with the adjacent regions of England.

Cinerary urns. Between food-vessels and cinerary urns the initial distinction is one of association rather than of

Fig. 72. Food-vessel or cinerary urn (Ht. 11 in.) found near Llangollen, Denb., with burnt bones and flint knife (Fig. 40)

form, and some cinerary urns, such as Fig. 72 from a cist at Llangollen,[1] or another from Kerry,[2] are in type merely overgrown food-vessels. As incineration, however, gradually ousted inhumation, the food-vessel dropped out of use for funerary purposes, and the larger vessels which replaced them soon developed along independent and well-marked

[1] *Ib.* 1868, p. 248.

[2] *Ib.* 1913, p. 438.

lines. For the present purpose these developments fall into three main stages :

1. The heavy projecting rim which is found on some cineraries of the fourth food-vessel type (example from Eglwys Bach, Denbighshire,[1] and another from Hayscastle, Pembrokeshire) [2] becomes increasingly pronounced (example from Nantglyn, Denbighshire),[3] and so developed into a well-marked flange, as on ' Bronwen's urn ' from Anglesey, now in the British Museum (Fig. 73, 1), and on two of the urns found near Dinam on the same island.[4]

2. This flange becomes deeper, and the urn now consists of three parts : a lower half shaped like an inverted, truncated cone, a bluntly angular shoulder which is sometimes the widest part of the vessel, and, above the shoulder, the deep overhanging-rim. The lower part of the urn is almost invariably plain ; the shoulder is often ornamented, generally with herring-bone pattern ; and the rim is decorated with a variety of geometrical patterns in which the triangle or chevron predominates.[5] At least two-thirds of the cinerary urns recorded from Wales are of this type (e. g. Fig. 73, 2–5).

3. The further development of this type is twofold. In one series the flange becomes gradually deeper, and the shoulder below it becomes more and more insignificant and ultimately disappears, as on an unusually small urn from Penmaenmawr, now in the College Museum at Bangor.[6] By a slight further or perhaps alternative step, the flange is merged into the side of the vessel, which thus becomes biconical (Fig. 76 from Cadno Mountain, Carmarthenshire).[7]

4. In another series both flange and shoulder are retained but gradually lose their structural entity and become merely

[1] *Arch. Camb.* 1913, p. 332.
[2] *Ib.* 1898, p. 195. Cf. a similar example from Llanbrynmair, Montgomeryshire, *ib.* 1904, p. 288.
[3] *Ib.* 1868, p. 245.
[4] *Ib.* 1882, pp. 210 ff.
[5] An urn of this type found on Barry Island, Glamorgan, is entirely undecorated, but is in this respect very exceptional. *Ib.* 1895, p. 71.
[6] *Ib.* 1891, p. 33.
[7] *Ib.* 1918, pp. 35 ff.

Fig. 73. Cinerary urns arranged in typological sequence

1 Ynys Bronwen, Ang. (Ht. 12 in.). 2 Pemmenmawr, Carn. (Ht. 9 in.). 3–4 Mynydd Carn Goch, Swansea, Glam. (Hts. 11 in. and 5¾ in.). 5 Templeton, Pemb. (Ht. 18 in.). 6–7 Colwinston, Glam. (Hts. 13 in. and 14 in.).

ornamented features. This process of devolution is well illustrated by Fig. 73, 6–7. The overhang of the flange is gradually replaced by a moulding or cordon, and the line of carination at the shoulder is similarly emphasized. The second urn from Colwinston (No. 7)[1] shows the final stage of this process, and other examples were found in the barrow at Llanddyfnan, Anglesey (Fig. 75, 4–5),[2] in one case with a third cordon added gratuitously to the lower part of the large vessel to hide a structural seam. The cordoned type is obviously one of the latest of the cinerary-urn series, and is assigned by Abercromby to Bronze Age IV, which is equated by Montelius with the period 1400–1150 B. C., but may well have begun and ended considerably later in western Britain.

Such are the main groups of Welsh cinerary urns. They fall naturally into place in the British series, and here call for no further comment. Apart from them, however, there are three or four Bronze-Age vessels which have been found in Wales in association with incinerated bones but are of heterogeneous types. Fig. 75, 7 from the Llanddyfnan barrow, Anglesey, is difficult to classify, but is perhaps a freakish derivation from the flanged or overhanging-rim type. Another, from the same barrow, is $7\frac{1}{2}$ in. high, well baked, of a good paste, and is decorated both inside the rim and on the neck and shoulder with twisted cord pattern. It was found close to the last-mentioned urn, but had apparently not contained bones. It was probably a domestic vessel and is of unusual form, but should perhaps be described as a food-vessel. The nearest analogy seems to be a food-vessel from the Isle of Mull.[3] Two urns from Presaddfed, near Holyhead,[4] are cordoned, but should perhaps be regarded as variant developments from a food-vessel type than as ' cordoned

[1] This urn contained, mixed with human bones, 22 lower jaws of field mice, 11 lower jaws of shrew-mice, and a quantity of small rib-bones, ' all of which it seemed certain had been deposited at the time of interment.' For analogous associations, see Abercromby, ii. 83.

[2] *Arch. Camb.* 1909, pp. 317 ff.

[3] *Proc. Soc. Ant. Scot.* xxvii. 369 ; Abercromby, i, Fig. 410.

[4] *Arch. Camb.* 1875, p. 126.

Fig. 74. Cinerary urn from Llangynidr, Breconshire. ($\frac{1}{4}$)

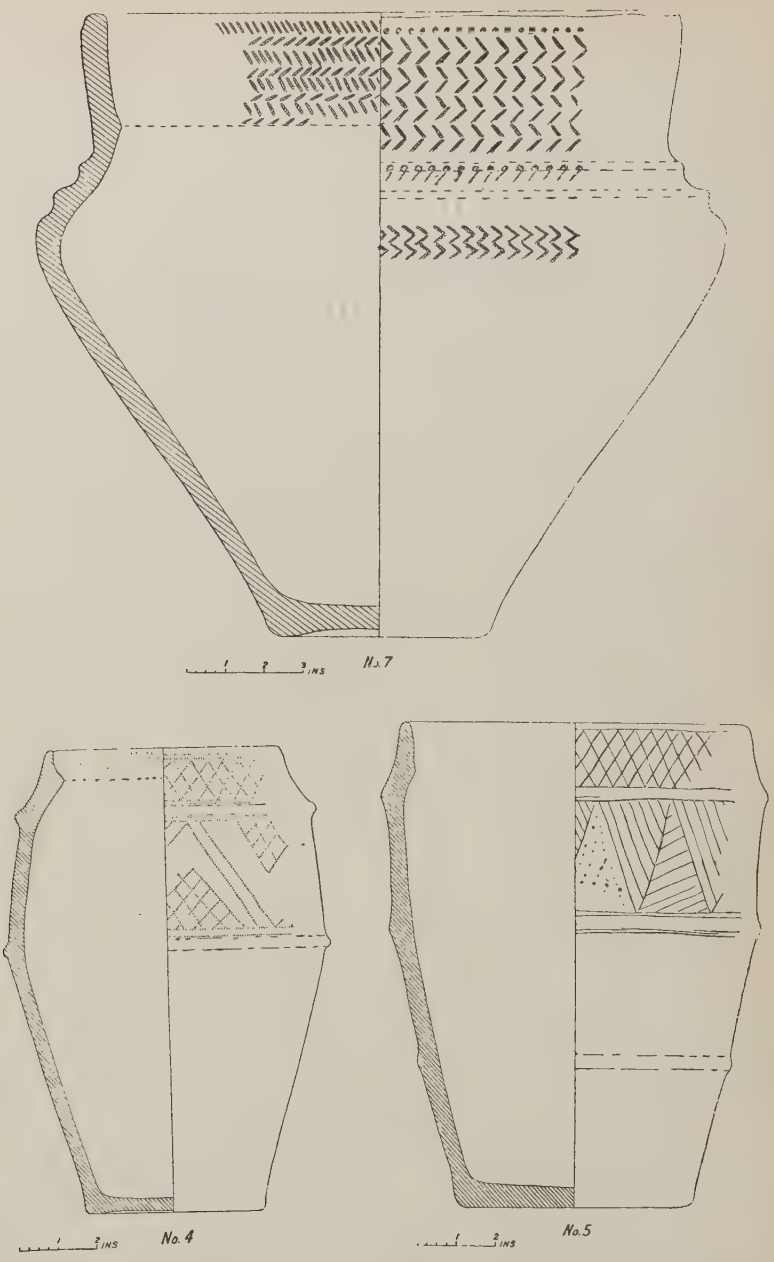

Fig. 75. Cinerary urns from a tumulus at Llanddyfnan, Anglesey. For implements found in No. 7, see Fig. 49.

Fig. 76. Cinerary urns with ' encrusted ' pattern : *A* from Cadno Mountain, Pendine, Carm. ; *B* from Ireland (about $\frac{1}{4}$)

urns ' in the sense above defined. Lastly, a small clumsily made urn, $5\frac{1}{2}$ in. high, found at Whitford in Flintshire, (Fig. 77) seems to have been associated with burnt bones and doubtfully with an ' incense-cup ',[1] but has some affinity with the food-vessel type illustrated in Fig. 69.

A word may be added in regard to the decoration of some of the later cinerary urns. Although the circle is not

Fig. 77. Urn and ' incense-cup ' from Whitford, Flints. (Ht. of urn $5\frac{1}{2}$ in.)

infrequently found as an ornamental motive upon Late Bronze-Age metal-work, circular or curvilinear patterns are very rare on Bronze-Age pottery. It is difficult to find a close analogy to a cinerary urn from Llangynidr, Breconshire, ornamented both on the inside and on the outside of the rim with rows of impressed circles (Fig. 74).[2] A poorly made urn from Alfriston in Sussex, roughly decorated with more or less fragmentary circles round the shoulder, offers

[1] Roy. Com. Anc. Mons., *Flints. Inventory*, 292.
[2] *Arch. Camb.* 1919, pp. 95 ff.

a slight resemblance,[1] but the Breconshire example may be regarded as the isolated *tour de force* of a local craftsman. South-west Wales has produced two of the best examples of the so-called 'encrusted' decoration formed in relief either by the application of strips or lumps of clay or by

Fig. 78. 'Incense-cups'. (⅓)

1 from Penmaenmawr, Carn. 2 from Abermeurig, Card. (with spearhead, Fig. 46, 3). 3 from Templeton, Pemb. (found in Fig. 73, No. 5). 4 from Bryn Seiont, Carn.

working up the surface of the vessel itself into raised patterns. Such decoration occurs occasionally elsewhere in Britain, but is more at home in Ireland. A very elaborate example found long ago on the Prescelly Mountains of Pembrokeshire, and now known only from a poor woodcut,[2] was ascribed by Thurnam to Irish influence; and fragments of another from Cadno Mountain in the parish of Pendine,

[1] *Sussex Arch. Coll.* ii. 270; Abercromby, ii, Fig. 8.
[2] *Arch. Camb.* 1853, p. 81; also Thurnam, *Arch.* xliii. 353.

southern Carmarthenshire (Fig. 76) [1] are almost duplicated by an example from Ireland.[2] These seem to be the only instances of this type of decoration from Wales, and, like the three Pembrokeshire food-vessels noted above, may with

Fig. 79. ' Incense-cups ' in the British Museum

1 from Pantglas, Tregaron, Card. (Ht. 2 in.). 2 from Carngoch, Swansea, Glam. (Ht. 2 in.). 3 from Porth Dafarch, Holyhead (Ht. 2½ in.). 4 from Llangwyllog, Ang. (Ht. 2⅜ in.)

little hesitation be ascribed to interaction between south-west Wales and Ireland. Urns with encrusted decoration are regarded by Abercromby as contemporary with the cordon type ; that is, as belonging to the latest phases of the Bronze Age.

[1] *Arch. Camb.* 1918, p. 39.
[2] R. A. S. Macalister, *Ireland in Pre-Celtic Times*, p. 213, Fig. 80A, upper illustration. With the Prescelly urn, compare *ib.*, p. 214, Fig, 80B.

Incense-cups. The purpose of these small cups is unknown. The average height is about 2 in., though a specimen from Anglesey is as much as $3\frac{3}{4}$ in. They frequently have two small holes about an inch apart at their widest gird, and in a few cases they have openwork sides. The piercings may have been used for lacing on a cover; at Penmon in Anglesey, two cups were found in a cairn 'lying on their sides, mouth to mouth', and it was thought that they might have been 'held together by means of a thong of some kind, passing through the holes as a kind of hinge, the one forming a lid to the other'.[1]

These cups are sometimes found alone, but they occur more generally amongst the burnt bones within a cinerary urn. A general survey of such cups shows that they are contemporary with all types of cinerary urn save the very earliest. The forms of these small vessels vary considerably, and it is not possible to trace any very definite sequence. Amongst the Welsh examples one (Fig. 77) from Whitford in Flintshire, if, as is very doubtful, it was found with the food-vessel or cinerary urn already mentioned, is probably a relatively early example. It seems to be the only globular specimen from Wales. The Penmon cups, already cited, may be a derivative form and in turn transitional to the more abundant type in which the upper part is cylindrical and the lower part conoidal (Fig. 78).[2] The development of the type may have been influenced by the somewhat similar angularity of the commonest type of cinerary urn (group 2 above), with which these carinated cups are often associated; e. g. Fig. 78, 3 was found with Fig. 73, 5. On some specimens the rim is everted (Fig. 79, 2). Some have openwork sides (Fig. 78, 4). A few suggest a food-vessel type; as a specimen from Penmaenmawr[3] and, less clearly, another from Porth Dafarch, Anglesey (Fig. 79, 3).[4] Others, such as Fig. 79, 4, defy further classification.[5]

[1] *Arch. Camb.* 1889, pp. 60–1.
[2] *Ib.* 1918, p. 39.
[3] Abercromby, ii. 36.
[4] *Arch. Camb.* 1889, pp. 60–1.
[5] For other examples, see *Arch. Camb.* 1905, pp. 62 ff. (Cardiganshire); 1891, pp. 33 ff. (Penmaenmawr); 1882, pp. 219 ff. (Anglesey).

The ornamentation of incense-cups is sufficiently represented by the illustrations. A characteristic feature of the more elaborately decorated specimens (Fig. 78, 3–4) is the wheel-cross pattern on the base. It is likely enough that here, as in other cases, the wheel was in origin a sun-symbol, though whether its representation on these funerary cups had an explicitly religious intent we cannot guess.

All the pottery hitherto considered was found on burial-

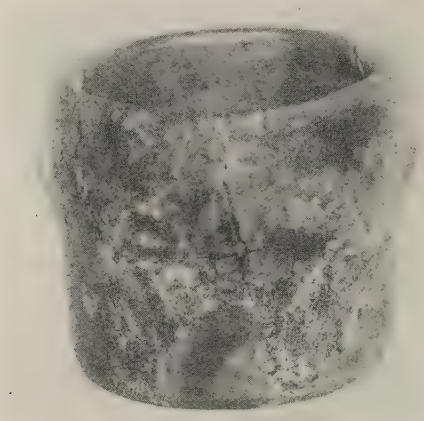

Fig. 80. Urn from cave on the Lesser Garth, near Cardiff (Ht. 4½ in.)

sites. Most of it was doubtless of types used normally for domestic purposes in the Bronze Age, and we may suppose that only its extreme friability, and the ease with which the ill-baked fabric disintegrates have prevented its survival save under the specially favourable conditions afforded by deliberate burial. Only in one instance in Wales has a pot of (apparently) Bronze-Age type been discovered in associations which may be other than sepulchral. Deep within a cave near the summit of the Lesser Garth, five miles north of Cardiff, amidst a fall of rock on the cave-floor, were found the fragments of a small, roughly made, cylindrical pot 4 in.

high, of dark brown ware nearly $\frac{1}{2}$ in. thick with a series of knobs or bosses below the rim (Fig. 80). This is the only example of the knobbed type known from Wales; in England the type occurs in the southern counties, especially Dorset and Wiltshire, but not farther north than Essex. When found with interments, these are usually by cremation, and therefore presumably of Middle or Late Bronze Age. In Armorica, however, du Chatellier assigns the type to the neolithic period, and its occurrence in northern Italy in the Aeneolithic and the Early Bronze Ages is quite consistent with this view. It is also found in the Pyrenees, and was clearly a widespread form, probably of long duration.[1] Its solitary appearance in South Wales may be ascribed to an intrusion from southern England.

[1] See generally Abercromby, i. 96, 115; and Colini, *Il sepolcreto di Remedello sotto*, xxix, Rl. V, Fig. 2; O. du Chatellier, *La poterie aux époques préhistorique et gauloise en armorique*, Pl. 2, Fig. 9.

VI

THE EARLY IRON AGE

The time and place of the discovery of iron are wrapt in uncertainty and do not concern us here. Suffice it to note that during the five centuries after 1000 B. C., the so-called Hallstatt Period, the inhabitants of central Europe learned to use iron increasingly for the manufacture of tools and weapons, although bronze was not yet entirely discarded for the purpose. This period of transition was, until recently, thought to be absent from the British Isles, where the use of iron was supposed to have been introduced suddenly in a developed stage about the 4th century B. C. by invaders whose chieftains were, in some cases, buried with their chariots and other elaborate grave-furniture. At the present moment, however, this text-book view is under revision. At Hengistbury Head and elsewhere in Hampshire, at All Cannings Cross Farm near Devizes in Wiltshire, on various sites in Sussex, Kent, Cambridgeshire, Huntingdonshire, and even as far north as Scarborough in Yorkshire, have been found various types of pottery bearing in greater or less degree a resemblance to Hallstatt wares of central Europe.[1] It has therefore been proposed to introduce a Hallstatt Period into British prehistoric chronology. Such a proposal is perhaps at present premature. The available evidence in Britain suggests less a real, coherent transitional civilization, such as is implied by the Continental Hallstatt, than a series of spasmodic local intrusions, along our south and east coasts, of comparatively poor and peaceful immigrants (possibly refugees) whose cultures were partially and indirectly in touch with those of Hallstatt Europe. Their pottery has not yet been found west of the Severn, but Wales

[1] See M. E. Cunnington, *All Cannings Cross*.

Fig. 81. Part of hoard from Llynfawr, Glamorgan. The spearhead and the larger sickle are of iron; the remainder of the hoard is of bronze

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can boast one very remarkable relic of this indistinct period, and may be expected to yield further evidence in course of time.

In 1911 a number of metal objects were found together in the peat-bottom of Llynfawr, a lake in northern Glamorgan.[1] With them are said to have been found hewn timbers, which may have been the remains of a lake-dwelling. Such remains have been found in the peat elsewhere in Wales, notably in the Abergwessin Mountains of Brecon-

Fig. 82. Iron socketed axe with part of wooden handle, from the Berwyn Mountains, Merioneth. (½)

shire, but no lake-dwelling in Wales has yet been scientifically excavated.[2] The metal objects were upwards of twenty in number, and consisted of six socketed bronze axes, two socketed bronze chisels, a bronze clasp and belt-fitting, a crescent-shaped razor of a type found on Continental sites of the Hallstatt Period, two winged sword-chapes, also of this period on the Continent, three bronze disks (possibly breast-ornaments), two bronze socketed sickles, a third sickle of similar pattern but made of wrought iron, and an iron spear-head (Fig. 81). Near by was found a bronze cauldron of

[1] *Arch.* lxxi. 133 ff.

[2] *Bulletin of Celtic Studies*, i. 282. A crannog or artificial island in Llangorse Lake, Breconshire, was partially explored in 1870 without result.—*Arch. Camb.* 1870, p. 192.

a type which occurs with bronze and iron implements both in Britain and Ireland, but not on the Continent. The iron sickle is unique and is perhaps the most striking example known of the adaptation of iron to a purely bronze type. It is the *tour de force* of a craftsman trained in the Bronze-Age tradition and playing, skilfully, with a new material which has not yet established a tradition of its own.

Fig. 83. Carved quern-stone from Blochty, Anglesey. (1/7)

A less elaborate example of the adaptation of iron to a bronze type was found many years ago on the Berwyn Mountains of eastern Merioneth. This is an iron socketed axe, now in the British Museum (Fig. 82).[1] It is of normal Bronze-Age form, save that the forepart tends to droop and to lose the symmetry of the prototype. This tendency is further developed in the only known analogy from Britain, an iron socketed axe from Walthamstow in

[1] *Arch. Camb.* 1855, p. 250; 1879, p. 2. The axe retains part of its wooden handle.

Essex,[1] and represents an increasing divergence from the older tradition.

The Llynfawr sickle and the Berwyn axe may be ascribed to sporadic trade or other casual infiltration rather than to any widespread or settled transitional culture in Wales. All other evidence is at present against the postulation of any early development of iron-working there. Indeed, if we except the traces of iron said to have been observed in the cairn which produced the Mold peytrel, the only implements of iron discovered with objects of pre-Roman type in Wales are those which seem to have formed a part of the comparatively late Ogmore find, described below. It is less explicable that not a single sherd of pottery which can with any certainty be ascribed to the Early Iron Age has yet been recorded from the Principality ;[2] and at present the craftsmanship of the period is there represented only by a carved quern-stone (Fig. 83), an iron ' fire-dog ', and some fifteen to twenty objects of gold or bronze.

These metal objects[3] are all marked in greater or less degree by the flamboyant curvilinear form of decoration which is the well-known characteristic of La Tène or ' Late Celtic ' art—an art based partly upon the palmette and other classical motives but developed first in the lands east of the Rhine and later in northern France into an entirely individual style.[4] In the British Isles the style reached its latest and fullest fruition ; in Roman Britain it survived until the

[1] *Brit. Mus. Iron Age Guide* (1925), p. 87.

[2] Romano-British pottery has sometimes been described, wrongly, as of Early Iron or Late Celtic period (e. g. *Arch. Camb.* 1912, p. 180). The excavation of hill-camps in Monmouthshire, however, could scarcely fail to yield some sherds analogous to those which occur so abundantly at Worlebury and other Early Iron-Age sites in Somerset.

[3] A list of Late Celtic objects from Wales is published in *Arch. Camb.* 1921, pp. 10–15. To this list must be added the fragment of bronze repoussé work found in the Romano-British huts at Rhostryfan, Carnarvonshire (*ib.*, 1923, p. 93), and a bronze mirror found near Harlech, now in the Nat. Mus. of Wales (*Ant. Journ.* v, No. 3).

[4] The most concise English account of the origins of this style is still that included in the introduction to the *Brit. Mus. Early Iron Age Guide.*

3rd century, and in Ireland it formed an important element in the great complex of Early Christian art. How early it reached these shores is not clear, but hardly before the 4th–3rd centuries B. C. Its apogee falls within the 1st centuries B. C. and A. D., and in Wales, of distinctively Late Celtic objects, at least nine are of types known to have been in use in the Roman period ; indeed six of them were actually found with Roman remains. Considered in relation to the absence of Late Celtic pottery and the extreme rarity of pre-Roman iron-work, this fact urges the inference that the Late Celtic culture reached Wales both late and incompletely. As a corollary we are almost compelled to suppose that the later Bronze-Age culture survived in Wales until the eve of the Roman conquest. At the same time this hypothesis is based wholly on negative evidence and is not without difficulty. The last five centuries before the Christian era are at present amongst the darkest periods in the prehistory of Wales.

The distribution of Late Celtic finds in Wales throws no light upon the movements of population. Being almost exclusively of metal and, in most cases, of types found far more numerously elsewhere in Britain, they may be referred rather to trade than to any extensive immigration. It is thought that at the time of the Roman invasion a powerful branch of the Brythonic-speaking peoples, with whom the Late Celtic culture is conventionally associated, had driven a wedge into Wales across Powys towards a point in northern Cardiganshire or southern Merioneth.[1] At present, however, no archaeological distribution is known to coincide with this conjectured invasion ; indeed, paradoxically enough, Powys-land and mid-Wales generally have yielded no significant Late Celtic finds save the Rhayader gold hoard, which is not earlier than the 2nd century A. D. and is therefore no real exception. The only substantial evidence for an actual Late Celtic occupation or intrusion is in South Wales and is furnished by an ill-recorded discovery made at Castell y

[1] H. J. Fleure and T. C. James, *Journ. Roy. Anthrop. Inst.* xlvi. (1916), 143-5.

Lligiad on Ogmore Down, Glamorgan, in 1818. The finds were all lost shortly afterwards, but a summary description with a few rough sketches survives to show their general character.[1] They must have been the richest and most remarkable of their kind known to have been discovered in Britain.

At a depth of about two feet, labourers digging for limestone found at least three inhumation-burials associated with daggers, apparently of iron (one, said to have had saw-edges, was 10 in. long, with a handle 5 in. long), and 'many heads of spears which lay interred upon a bed of small coal'. Upon the skulls were bronze helmets, which the sketch shows to have been of the conical type borrowed by the Celts from Italy as early as the 5th century B. C.[2] Two of the helmets had silver finials, weighing 'about an ounce', from which on each side two wires of twisted gold and silver were carried down to hold up two hinged cheek-guards when not lowered for use. The cheek-guard was commonly a prominent feature of the Italo-Celtic helmet, but, if the sketch may be trusted, those of the Ogmore helmets were small and merely ornamental survivals. They are said to have been of gold alloy, and were ornamented with red enamel. The brims of the two richer helmets were each decorated with a band of blue enamel between bronze beadings. In addition, two skull-caps of copper 'near a quarter of an inch thick' and 'one or two pieces of small brass chain' were unearthed. It is not recorded whether the skull-caps were worn under the helmets, but this is likely enough since the metal of the helmets was only 'about one line in thickness'.

These helmets, with their burnished golden bronze, their silver finials and cords, and their red and blue enamel, must have presented a splendid appearance, and recall the rich caparisons of the Celtic chieftain slain by Marcellus in the battle of Clastidium.[3] The metal helmet was, however, rarely used by the Celts, and was doubtless a privilege of

[1] *Arch.* xliii, Appendix.
[2] See Déchelette, *Manuel*, ii. 1164.
[3] Plutarch, *Marcellus*, 7, 8.

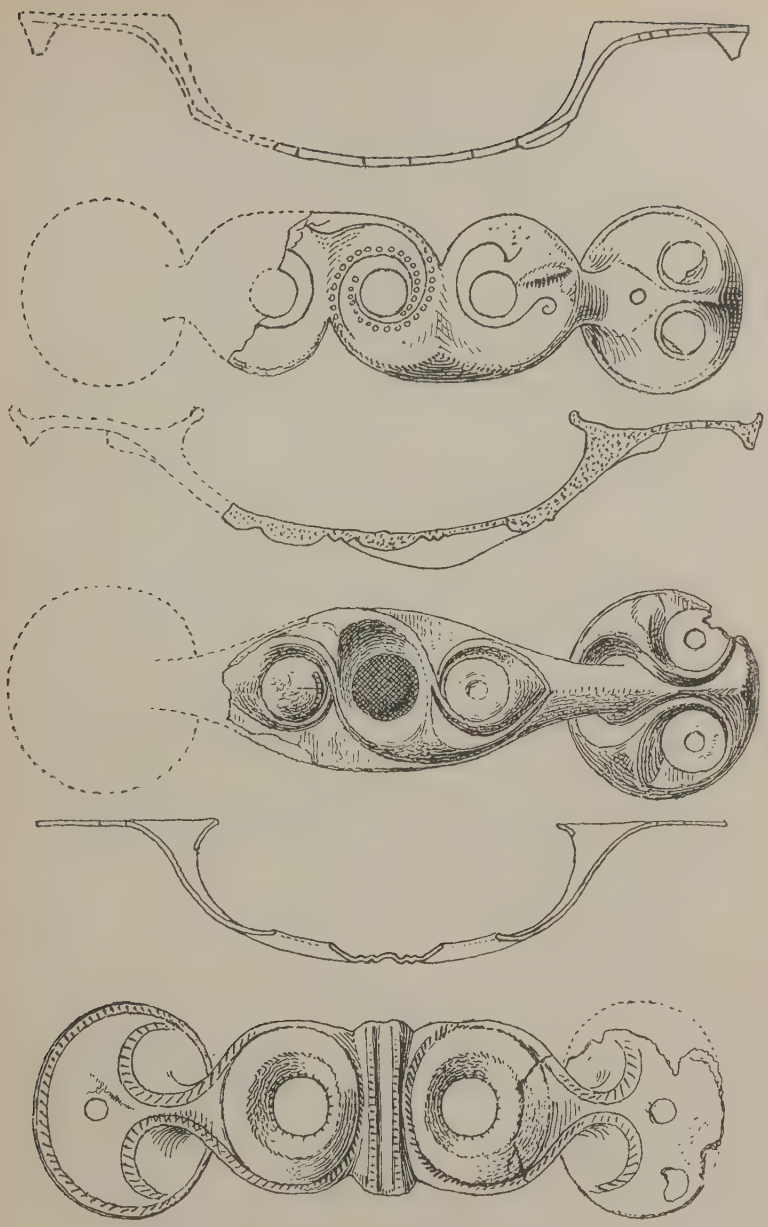

Fig. 84. Enamelled bronze tankard-handles from Seven Sisters, near Neath, Glam. (¾)

rank; apart from the Ogmore find only two Late Celtic helmets are known from Britain.[1] The presence of blue enamel suggests a date not earlier than the 1st century A. D.,[2] and it is quite possible that the burials are those of Celtic-

Fig. 85. Tankard of bronze-plated wood from Trawsfynydd, Merioneth (Ht. 5⅝ in.)

speaking chieftains who had found their way into South Wales at or about the period of the Roman conquest.

Of other Late Celtic finds from the Principality, the most extensive is the collection of ornamented horse-trappings, tankard-handles, and other oddments found at Seven Sisters near Neath, some nine miles north-west of Ogmore Down

[1] *Brit. Mus. Early Iron Age Guide* (1925), p. 107.
[2] Déchelette, *Manuel*, ii. 1547 ff.

Fig. 86. Bronze collar from Llandyssul, Card. (3)

(Fig. 84).[1] Some of these objects are decorated with red and white enamel, and are therefore presumably as late as the 1st century A. D. It included a bronze chisel, two small bells, a bronze weight which belongs to a non-classical standard recognized elsewhere only in a weight found at Mainz.[2] A plain tankard-handle of similar type to those from Seven Sisters seems to have been found in the neighbourhood of Roman pottery in hut-circles at Porth Dafarch on Holyhead Island,[3] but the most elaborate example of its kind is the

Fig. 87. Bronze armlet from Llanrwst, Denb. (¾)

handle of the famous tankard from Trawsfynydd in Merioneth, now at Liverpool (Fig. 85).[4] The tankard is of wooden staves, covered externally with a jacket of bronze, and is plain save for concentric circles on the base and for the very finely decorated handle. This has been compared with the flamboyant tracery of late medieval architecture, but with all its vigour and freshness it shows a restraint and even

[1] Fully illustrated and described in *Arch. Camb.* 1905, pp. 127 ff. Now in the National Museum of Wales.
[2] R. A. Smith, *Proc. Soc. Ant.* (2nd series) xx. 189.
[3] *Arch. Camb.* 1878, p. 35.
[4] *Ib.*, 1896, pp. 212 ff. I am indebted to the Curator of the Liverpool Museum for the photograph of this tankard.

a severity which such a comparison is liable to obscure. The flowing eccentric curves of which the design is composed are encompassed by a strong and restful outline, and the design ranks amongst the highest achievements of one of the most brilliant phases in the history of purely decorative art.

Fig. 88. Bronze spoons from Penbryn, Card. (½)

The principle of the eccentric curve is also illustrated, though less strikingly, on part of a bronze collar from Llandyssul in Cardiganshire (Fig. 86); an analogous collar found on the Isle of Portland with Samian pottery suggests that the type may be of late date.[1] A more symmetrical variant of the Late Celtic style is represented by the bronze armlet from Llanrwst, Denbighshire (Fig. 87).[2] On this the

[1] *Arch. Camb.* 1901, p. 83 (Bristol Museum). For the general type, see *Arch.* liv. 495 ff.

[2] *Arch. Research*, pub. by the Nant Conwy Ant. Soc. 1910, p. 48; W. Besant Lowe, *Heart of Northern Wales*, i. 48 (Ashmolean Museum).

spandrels between a series of strongly marked oval bosses are filled with small leaf-patterns treated with a comparative realism unusual to the style. Two pairs of ' spoons ', one from Penbryn in Cardiganshire (Fig. 88) and the other from

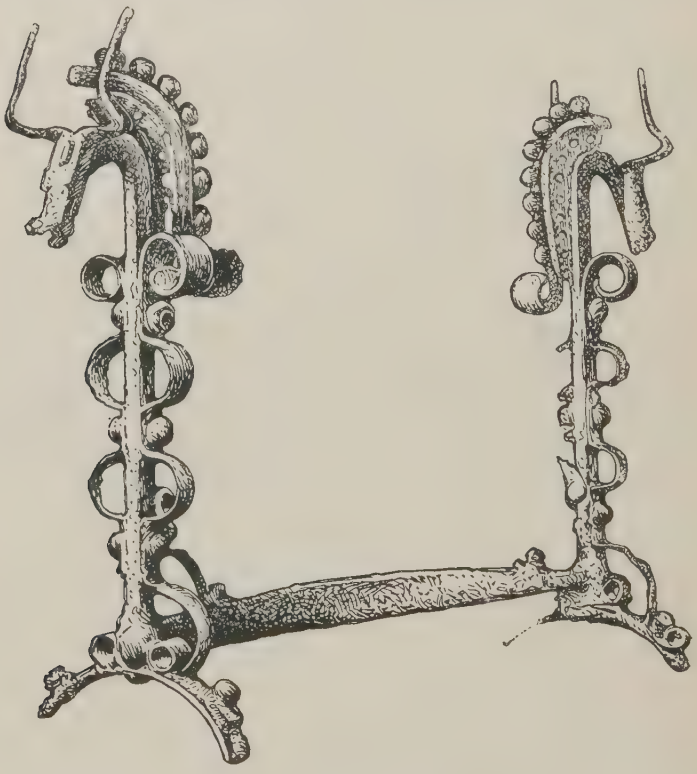

Fig. 89. Iron ' fire-dog ' from Pentrevoelas, Denb. (Ht. 2 ft. 6 in.)

Llanfair in Denbighshire, belong to a series of about eleven such finds, mostly from Britain but in one case from a female burial near Pogny, Marne.[1] One spoon of the pair usually bears a cross and the other a small piercing, but the use of the spoons is unknown.

[1] *Arch. Journ.* xxvi. 52 ; *Arch. Camb.* 1870, p. 109 ; Déchelette, *Manuel*, ii. 1275 ; *Proc. Soc. Ant. Scot.* 5th ser. lviii, 1923–4, p. 143.

The ox-head is a well-known Late Celtic motive, and occurs on a fine iron ' fire-dog ' or ' amphora stand ' (its use is disputed) found near Llanrwst in Denbighshire (Fig. 89).[1] Other objects of this type from Essex and Hertfordshire were in use as late as the 1st century A. D. The ox-head occurs as a small ornament in the 3rd–4th century stratum of the hill-fort of Dinorben in north-eastern Carnarvonshire,[2] and, though it may there be an exceptional survival, it is found in identical form with Roman remains at Lydney Park,

Fig. 90. Gold-plated bronze brooch from Tre'r Ceiri, Carn. (Fig. 107). ($\frac{1}{1}$)

Gloucestershire, and may therefore be regarded as a late type. Another example of the late survival of the motive is provided by an early 2nd-century brooch found in the Roman fort at Carnarvon.[3]

Other instances of the survival of Late Celtic craftsmanship well into the Roman period may be cited briefly. The gold-plated bronze brooch (Fig. 90) from the hill-fort of Tre'r Ceiri in Carnarvonshire has often been cited as a partial

[1] *Arch. Camb.* 1901, pp. 40 ; 1912, p. 103. Cf. R. A. Smith, *Arch.* lxiii. 7, and Déchelette, *Manuel*, ii. 1408.

[2] *Arch. Camb.* 1913, p. 195. Cf. *Proc. Soc. Ant.* (2nd Series), xxi. 133 ; and Bathurst, *Roman Antiquities at Lydney Park*, Pl. XXVII, 9.

[3] *Arch. Camb.* 1922, p. 326. The Ashmolean Museum contains an identical brooch from Wroxeter.

Fig. 91. Vessel of tinned bronze, with false-bottom and strainer, found with 3rd-century coins at Kyngadle, Carm.

analogy to the late 2nd-century 'Aesica' series.[1] The extravagant and grotesque design of these late brooches represents the decadence of the Late Celtic craftsmanship. The small hoard of gold ornaments found near Rhayader in Radnorshire is dated to the same or the following century by the ring which it included.[2] The necklet from this hoard

Fig. 92. Bronze vessels found with 1st-century coins near Harlech, Merioneth.

now consists of nine small oblong plates each containing (or intended to contain) a large oval stone of carnelian or blue paste. The points of juncture between the plates are covered by strips of typical Late Celtic repoussé pattern. The bracelet or bracelets consist of a plate of beaten gold bearing two bands of plaitwork in gold wire and terminating in

[1] *Arch. Camb.* 1904, p. 9; 1921, p. 11; *Cymmrod. Soc. Trans.* 1920–1, p. 53. Cf. *Arch.* lv. 179.

[2] *Arch. Camb.* 1899, p. 259; *Brit. Mus. Cat. of Jewellery*, p. 327. Cf. *Arch.* xiv, Pl. VIII (the Springhead necklace).

hinge-plates finely ornamented with scroll-work and blue and green enamel. The find is now in the British Museum. Finally, reference must be made to the patella or saucepan of tinned bronze found, it is said, with coins of Carausius at Kyngadle in the parish of Llansadyrnin, Carmarthenshire (Fig. 91).[1] The *triskele* pattern of the false bottom to this vessel is of distinctively Late Celtic form, and is of unusual interest as an example of the modification of a Roman type by a native craftsman. The Kyngadle saucepan may be contrasted with others of conventional Roman type found at Ynys Gwrtheyrn, near Harlech in Merioneth, apparently with coins of late 1st-century date (Fig. 92).[2]

[1] *Arch. Camb.* 1901, p. 24; Roy. Com. Anc. Mons., *Carm. Inventory*, 559.
[2] Roy. Com. Anc. Mons., *Merionethshire Inventory*, 305.

VII

THE ROMAN OCCUPATION

With the Roman occupation, Wales emerges into the grey dawn of history. True, the direct references to Wales in Roman writings are meagre in the extreme ; and, were these our only fresh source of information, the transition from the prehistoric to the historic would be unimportant. But if we take into account the indirect transmission of European history through such secondary media as coins, inscriptions, and pottery of known date and origin, it is clear that archaeological evidence has assumed in this period a new precision which often approximates to that of the written word.

The significance of this evidence in regard to Wales is, to an appreciable extent, retrospective. In the absence of a well-defined Early Iron Age in Wales, and the consequent deficiency of points which can even provisionally be regarded as fixed within the immediately pre-Roman centuries, the period of Roman occupation stands out as the only sure datum-point from which we can attempt to map the later prehistoric civilizations of Wales. This process is, in some degree, facilitated by the fact that the native population of Wales was for the most part touched only incidentally by the Roman invader and that it continued to develop during the early historic period upon native rather than upon Roman traditions. The policing of Wales by Roman troops may indeed have accelerated rather than diverted the natural evolution of native culture in its social and political aspects. If there were many Roman forts in Wales, there was only one Roman town ; and we shall see that even the forts were in many cases abandoned at an early date. We are confronted, therefore, with the paradox that the intrusion of the foreigner coincided with

and perhaps contributed indirectly towards the culmination of a prehistoric native culture, and that a chapter on Roman Wales is the necessary complement to a study of Wales in prehistoric times.

The written history of Roman Wales is contained in a few scattered pages of Tacitus, and can here be dismissed in as few sentences. The legions of Claudius landed in Britain in A. D. 43. Before A. D. 50 they had swept across the midlands and reached the Welsh Marches, where Ostorius Scapula, commander of the Roman forces since the year 47, defeated a native force led by Caratacus, a refugee Celtic prince from Essex. North-eastern Wales, corresponding roughly with the modern Flintshire, was subjugated at the same time ; but the Silures of Monmouthshire and Glamorgan proved amenable neither to negotiation nor to severity, although a legionary fortress was established amongst them, possibly, though not certainly, at Caerleon. To liberate active troops for this purpose from south-eastern Britain, a colony of veteran soldiers was placed at Colchester in or about A. D. 50, and for ten indecisive years the Roman power in Britain lay uneasily between the unconquered Silures in the west and the shifty vassal kingdoms of the east. When, however, in the year 60 the Roman governor Suetonius Paulinus again opened hostilities by carrying out a raid upon the native religious stronghold of Anglesey, his immediate success was nullified by the great rebellion which broke out behind him under Boudicca and the Iceni of East Anglia. It was not until A. D. 71–74 that Petilius Cerialis finally subdued North Wales ; and the work of conquest was completed with the subjugation of the Silures by Julius Frontinus between 74 and 78, and with the ' almost complete extinction ' (Tacitus) of the Ordovices of mid-Wales at the hands of Agricola in the latter year. Agricola and his historian then turn northwards, and it remains for archaeology, fortified but slightly by the Antonine Itinerary and the geographers, to continue the story of Roman Wales with the spade rather than with the pen.

It will be seen that this story falls naturally into three

main divisions, each essentially distinct from the others. Wales was first subjugated and later policed and defended by troops stationed (intermittently) at a large number of strategic points; the first and most obvious division, therefore, is that relating to remains of the Roman *military* occupation. Secondly, in a comparatively restricted region

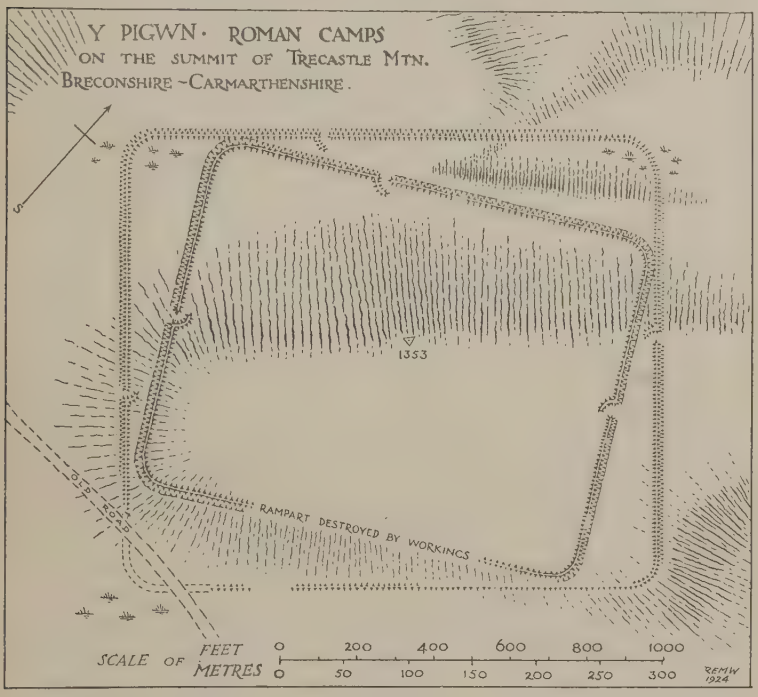
Y PIGWN · ROMAN CAMPS
ON THE SUMMIT OF TRECASTLE MTN.
BRECONSHIRE ~ CARMARTHENSHIRE.
1353
RAMPART DESTROYED BY WORKINGS
OLD ROAD
SCALE OF FEET 0 200 400 600 800 1000
METRES 0 50 100 150 200 250 300
RCHMW 1924

Fig. 93

of South Wales a Roman town and a few Roman farmsteads and small industrial centres came into being, and must be considered separately as evidence of a Roman *civil* occupation. Remotely in touch with both these groups, but very little influenced by them, the *native* inhabitants of Wales in their hill-top towns and hut-villages form a third group of considerable but uncertain extent. Less readily classified are the evidences of *mining*, whether in the form of stamped

metal or in that of workings associated with Roman remains ; and a separate section may therefore be added for the discussion of material of this kind.

(*a*) *The Military Occupation*

The Roman conquest of Wales is, as we have seen, associated successively with the names of Ostorius, Suetonius, Cerialis, Frontinus, and Agricola. Of these, the last three effected the final subjugation of the peninsula, and their campaigns resulted in the establishment of an extensive series of stationary garrisons shortly before and after A. D. 80. Ostorius and Suetonius, on the other hand, left no permanent impression save on the border-lands, and even there direct evidence of their handiwork is very elusive. Their more westerly campaigns have doubtless left faint and unrecognized traces in various parts of Wales ; but whether the two large legionary camps known as Y Pigwn on Trecastle Mountain in north-western Breconshire, one placed askew within the other (Fig. 93),[1] represent incidents in these or in subsequent movements cannot be guessed without excavation. Even excavation might leave the problem unsolved, for little debris of any significance could be expected in the vestiges of a temporary encampment. Certain it is, however, that these two large rectangular earthworks were thrown up to shelter considerable bodies of troops for a few days or weeks during field-operations which should be dated probably before rather than after the time of Agricola.

Until more evidence becomes available therefore, we must pass directly from the early period of active warfare to the time when, under the Flavian emperors, Wales was

[1] These camps are respectively 36·8 acres and 23·9 acres in area. The smaller is certainly the later, and its lay-out is determined by the necessity of encompassing the summit of the mountain and of excluding marsh which had probably formed here and there within the earlier defences. The banks are now rarely more than 18 in. high, and a very slight exploration indicates that they are of earth rather than of turves (the material used, for example, at Cawthorne in Yorkshire).

finally absorbed into the imperial frontier system. Thenceforth the military history of Roman Wales falls seemingly into four main phases.

PHASE I. *circa* A. D. 75–140 : *period of intensive occupation.* The Roman system of 'pacification' of a newly captured province was simple and for a time effective. The front line was held by regiments of auxiliary troops, from 500 to 1,000 strong, quartered in forts ranging from 3 to 7 acres in extent. Between and sometimes beyond the forts were smaller fortified posts which can best be described as military police-stations ; these varied from $\frac{1}{4}$ acre to 2 acres in size. Behind the auxiliaries lay the great fortresses which formed the head-quarters of the legionary troops or regulars, to whom primarily Rome looked for the maintenance of her great military traditions. Behind the legions, as we shall see in a later section, sprang up the towns, some of them officially nurtured, upon which devolved the all-important task of ingratiating and consolidating the new province.

This logical system is represented in Britain with unusual completeness and conciseness. In its military aspects it found expression in two slightly different ways. In the north of the province, the reserve of unpacified territory was sufficiently large and amorphous to necessitate some palpable line of delimitation upon which the Roman political authority and military power could readily converge. The north, however, was never fully dominated, and the great barriers of Hadrian and Antonine, with their rigid lines of forts and outposts, remain as symbols of defeat.

In the west, on the other hand, the proximity of the coast-line facilitated a looser and at the same time more effective system of control. A Mercian king of the 8th century attempted to solve the problem much as the Romans solved that in the north, by drawing a dyke from Dee to Severn. The Romans in this case, however, realized from the outset that to set up a boundary was to dare the enemy to cross it, and that the only safe frontier was a subjugated Wales. This bold policy, though shelved by more than one Roman governor during the earlier years of the occupation,

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was eventually carried through with brilliant success Within the last quarter of the 1st century Wales was enmeshed in a network of forts and roads covering a roughly rectangular area with its corners at Chester, Carnarvon, Carmarthen, and Caerleon. Beyond this area, the promontory of Pembrokeshire seems to have been held by a series of small and perhaps short-lived outposts;[1] whilst the high and broken country of the promontory of Lleyn (Carnarvonshire) was omitted as a natural no-man's land, though within ready striking distance of the two forts which, at Carnarvon and Tomen-y-mûr, held the northern and southern flanks of Snowdonia (map, Fig. 113).

This system was based characteristically upon the legionary fortresses at Chester (Deva) and Caerleon (Isca). Chester may have been garrisoned by the Legio XX Valeria Victrix as early as A. D. 50.[2] Historically there is little reason why Caerleon should not have been established, at least temporarily, by the Legio II Augusta about the same date, but the pottery and coins known from this site combine to suggest that there was no settled occupation there before the time of Frontinus (*c.* A. D. 75).[3] Only extensive excavation down to the lowest level can determine satisfactorily whether the beginning or the end of the third quarter of the century saw the actual foundation of the fortress.

Placed in the midst of the narrowing valley of the tidal Usk, at a point which is at the same time accessible and safe from the sea, the site of Caerleon was, like those of most permanent Roman forts, both comfortable to live in and a commanding strategic centre. Coastwise towards the west, troops could be hurried either by sea or by an easy

[1] e. g. Castle Flemish; see *Arch. Camb.* 1923, pp. 211 ff.

[2] Haverfield, *Cat. of Rom. Inscribed Stones in the Grosvenor Museum, Chester*, pp. 7, 42. Further evidence, however, is desirable.

[3] Only four coins from the site were minted before the time of Vespasian, who is represented by upwards of twenty (see *Bulletin of Celtic Studies*, ii). About twenty fragments of Samian form 29 are amongst the local pottery in the Caerleon Museum; none of them is distinctively of the Claudian types which occur at Hofheim, Richborough, and elsewhere, though their presence is not of course inconsistent with the possibility of an occupation before Frontinus.

road through the Vale of Glamorgan; whilst towards the middle of Wales the winding valley of the Usk afforded

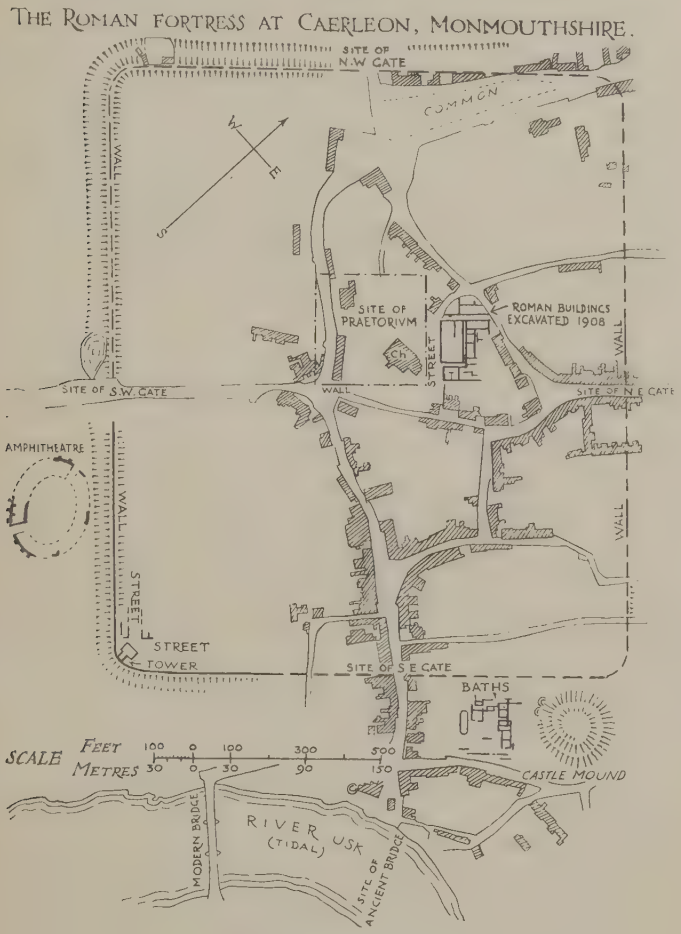


Fig. 94

a ready approach between the Brecon Beacons on the south and the Black Mountains on the north. No other site in south-eastern Wales is comparable in respect of general accessibility from every point of the compass.

The visible remains of the fortress indicate a nearly square enclosure 50 acres in extent (Fig. 94). Slight excavation within the southern corner has indicated that, as in other forts, the 1st-century rampart was of earth, although an internal tower at this point was of stone—'the masonry carefully finished, the joints on the side facing the camp being pointed with white mortar, and picked out with lines of red paint'[1]—and was shown by coin-finds to be of Flavian date. At some later period, perhaps in the 2nd century, the bank was fronted by a stone wall 6 ft. thick at the bottom, 4 ft. 4 in. wide at the top, and still standing to a maximum height of 12 ft. Within the defences, the original buildings were doubtless of timber, but must, on analogy, have been replaced by others of stone by the beginning of the 2nd century. Of these or subsequent structures fragmentary remains have been found from time to time, notably in 1908–9, when part of a building of residential type was uncovered in the parish churchyard, near the centre of the fortress.[2] Again, adjoining the turret in the southern corner, was found a latrine, and near by, about 30 ft. within the south-west wall and rampart, was a street flanked by buildings (probably barrack-blocks) of uncertain extent. But until excavations commensurate with the importance of the site have been carried out in the considerable area still available, our vision of Caerleon cannot rival that which greeted Giraldus Cambrensis in the 12th century :

'The city was handsomely built of masonry, with courses of bricks, by the Romans. Many vestiges of its former splendour may yet be seen, immense palaces, formerly ornamented with gilded roofs, in imitation of Roman magnificence[3] . . . a town of prodigious size, remarkable hot baths, relics of temples and theatres all enclosed within fine walls, parts of which remain standing. You will find on all sides, both without and within the circuit of the walls, subterraneous buildings, aqueducts,

[1] From the Appeal issued by the Liverpool Committee for Excavation and Research in Wales and the Marches in 1909.

[2] For this and for a summary of previously recorded discoveries, see H. G. Evelyn-White, Liverpool Committee for Excavation and Research in Wales, *First Annual Report* (1908), pp. 53–82.

[3] A solitary gilded tessera may be seen in the Caerleon Museum !

Fig. 95. Caerleon: exterior of the amphitheatre from the SW.

underground passages; and, what I think worthy of notice, stoves contrived with wonderful art to transmit the heat insensibly through narrow tubes passing up the side of the walls.'[1]

Amongst the buildings without the circuit of the walls was a bathing establishment placed characteristically between the fortress and the river and afterwards partly covered by a Norman castle-mound. Here was long ago discovered a stone dedicated to Fortune by a *praefectus castrorum* or camp-commandant; such dedications to Fortune were common enough in military bath-buildings, and had doubtless special reference to the games of chance which found favour in these resorts. Another building with baths is known to exist in the field immediately south-west of the amphitheatre, and much building-material and at least two wells show that more than one structure lay outside the defences on this side of the fortress. The amphitheatre itself, partly excavated in 1909, is an elliptical building 274 ft. long and 226 ft. broad. The outer wall is $5\frac{1}{2}$ ft. thick and is buttressed both internally and externally (Fig. 95). The inner or arena wall, originally at least 7 ft. high, contained a centurial stone recording in good lettering the work of a company of the 2nd Legion. The seats between these walls seem to have been made of wood. The arena was paved with large river cobbles, covered with sand a foot in depth in which lay a knife or dagger with a carved bone handle. The two entrances—one facing the nearest gate of the fortress, the other the open country—were about 9 ft. wide and were probably vaulted.

Other scattered buildings, represented by tessellated pavements, have been found at Phil Bach farm about half a mile west of the fortress, and, on the other side, at Great Bulmore, rather more than a mile up the Usk valley. An inscription records the restoration of a temple of Diana, the site of which has not been identified.[2] The principal

[1] *Itin. Kamb.* v.

[2] Temples must frequently have stood in the vicinity of the more permanent forts—at Pfünz, on the Raetian frontier, as many as three or possibly four temples have been found within a short distance of the fort-walls. But only by chance can the excavator hope to stumble upon scattered external buildings such as these.

cemeteries lay to the north, near the present railway-station and to the south-east where, on the opposite side of the

Fig. 96. Fragment of stone relief representing a hunting scene, Caerleon

river, tombs appear to have flanked the road which left the fortress at the south-east gate, crossed the river by a bridge,[1]

[1] The river is here broad and deep, and must have been crossed by a Roman bridge on the site of the medieval one. Two centurial stones have been found at or close to the north-western point of abutment, but there is no evidence that they were *in situ* as part of the Roman bridge.

and shortly afterwards branched across the hill to Caerwent and up the valley to the fort at Usk.

Such, in summary, is our scanty knowledge of the topography of Isca. Like other garrison-stations both large and small, the legionary fortress attracted settlers of various types—time-expired soldiers, traders, entertainers, and the women and children, who at first unofficially and after the year 197 officially, formed the families of the garrison and lodged without the walls. Much of this extra-mural population must have been drawn from the native inhabitants of the neighbourhood,[1] and it was doubtless through them, both here and elsewhere in Wales, that Roman pottery and knick-knacks found their way, as we shall see, into the native settlements amongst the hills. Not infrequently, the non-military settlers constituted a separate *vicus* or parish with some sort of self-administrative authority. Occasionally, as at Kastel near Mainz, they evolved more than one *vicus*, each with its distinctive name and possibly with something of the status of a ward in a modern town. Rarely, the *vicus* grew to real civic dignity—at York it even achieved ' colonial ' rank. But neither Caerleon nor Chester seems to have developed far in this direction. In both these places the civilian population seems to have remained comparatively small and insignificant, and it was left for the retired soldier of the 2nd Legion to seek the joys of town-life eight miles away at Caerwent or across the Severn Sea at Bath.[2]

Of the sister-fortress at Chester our knowledge is even less extensive than of Caerleon. If we turn, however, to the auxiliary forts, we are on surer ground. At the Brecon Gaer, at Coelbren in the same county, at Castell Collen in Radnorshire, at Caersws in Montgomeryshire, and at Carnarvon

[1] e. g. the Flavia Veldicca (or Vledicca), whose name is preserved on her husband's tombstone, now in the Caerleon Museum.

[2] Nevertheless it is likely enough that the country-side around Caerleon was widely exploited for agricultural purposes; the discovery of a centurial stone in the earthen sea-wall near Goldcliff, some three miles south of Caerleon (Fig. 98), may indicate a Roman origin for this work and, if so, proves that large tracts of marshland were reclaimed here, presumably for cultivation.

Fig. 97. Ivory carvings of 3rd or 4th-century date, from Caerleon

(Segontium), excavation has revealed the remains of oblong forts upwards of five acres in extent, with earthen ramparts and timber buildings which so far as they are known seem to have resembled in plan their successors of stone. The fate of these timber forts is not always clear. That at Coelbren was abandoned after a comparatively short occupation. Others, such as Segontium and perhaps the Brecon Gaer, seem to have been partially burnt. In Wales, as in Scotland, the generation which followed the work of Agricola may have been a period of greater liveliness and change than has generally been suspected.[1] Half a dozen coin hoards dating from *c.* A. D. 100 suggest at least local disturbance and insecurity then. Certain it is that shortly after that date the Welsh frontier was reorganized and many of the forts were largely reconstructed in stone.

Whether or no this reorganization was immediately occasioned by local incidents, in a wider view it must be regarded as part of that general consolidation of the frontier-system which was inaugurated by Domitian and Trajan and consummated by Hadrian. By redistributing some of the garrisons and by rebuilding and strengthening the decayed timber forts, these emperors (and particularly Trajan) were able to meet some of the demands of the exacting Continental campaigns of the period by economizing troops on the British frontiers. Thus, in Wales, a rearrangement of the garrisons in Glamorgan seems to have led to the establishment at Gellygaer of a small fort $3\frac{1}{2}$ acres in extent, with stone-faced ramparts and stone buildings, and a fortified annexe containing a bath-house and other structures. This fort, built apparently between 105 and 112, occupied a virgin site, but generally an existing fort was adapted. So at Carnarvon stone buildings were raised within the old earthen rampart, and at Castell Collen the new stone fort occupied about two-thirds of the area of its 1st-century predecessor (Fig. 100). It is possible that at Tomen-y-mûr in Merioneth and at Caer Llugwy in Carnarvonshire a similar reduction

[1] The evidence from Scotland is discussed by Dr. G. Macdonald in *Journ. Rom. Studies*, ix. 111 ff.

Fig. 98. Centurial stone found in the earthen sea-wall about 400 yds. west of Goldcliff Priory, on the Monmouthshire coast.

COH(ORS) I (LEGIONIS II AVGVSTAE) C(ENTVRIA) STATORI M[A]X[I]MI . . . : ' The company of Statorius Maximus of the first cohort of the 2nd Augustan Legion [built so many feet of this sea-wall].'

was carried out at this time, though the latter may have been a new foundation of the type of Gellygaer. At the Brecon Gaer the preliminary excavations suggest that the rebuilding in stone was planned on an unusually ample scale, the work possibly of legionary rather than of auxiliary troops. Be that as it may, the rebuilding seems to have been interrupted about 120, presumably when troops were concentrated in the north for the construction of Hadrian's Wall. The unfinished fort, however, was lightly occupied until the Antonine period, and perhaps intermittently in later times. The large hall which straddles the principal street in front of the head-quarters building (Fig. 100) is without analogy in Britain save at Newstead in Scotland; it is common enough in the forts of the German Limes, and is usually, though not exclusively, associated with cavalry regiments such as that which is known to have garrisoned the Gaer (*Ala Hispanorum Vettonum*).

Thus, with reduced but strongly posted garrisons, Wales was held until, under the Antonines, the centre of interest again moved northwards into Scotland. The armies which assembled in the Lowlands under Lollius included large drafts from the legions at Caerleon and Chester, and with them seems to have gone the greater part of the auxiliary army in Wales.[1] Thenceforth many, perhaps most, of the Welsh forts remained desolate for ever; the rest lay empty or at least idle for more than half a century until, in the active reign of Septimius Severus, the partial reoccupation of the Principality ushered in the second phase of its military history.

Phase II. *The re-occupation under Severus.* The period of the Severi was marked by much military activity throughout the Empire. The precise value of this activity is not always easy to gauge, and the real significance of the work attributed by the classical historians and by the inscriptions to Septimius Severus in Britain has recently been disputed from various points of view.[2] In Wales it is at least certain

[1] The evidence is discussed in *Y Cymmrodor*, xxxiii.
[2] *Journ. Rom. Studies*, xiii. 69 ff., and *Y Cymmrodor*, xxxiii.

that in the decade preceding the death of Severus at York (A. D. 211) certain of the more important auxiliary forts in Wales were rehabilitated, and that this work was accompanied or preceded by the restoration of the two base-fortresses. The north wall of Chester (together, doubtless, with the others) was now built in some haste partly with tombstones—the latest dating from the reign of Commodus—robbed from a neighbouring cemetery. At Caerleon, part of a large inscription found on the site of the head-quarters building commemorates repair-work carried out under the Severi (Fig. 99). Amongst the smaller forts, Caersws was apparently walled and manned at this period ; whilst Segontium and its approaches were rebuilt on an extensive scale which suggests that this fort may have become something of an administrative centre for north-west Wales—a possibility which is not lessened by the known tendency at this period for military control to assume an increasingly civil complexion. A noteworthy feature of the new fort-plan at Segontium is the enlargement of the administrative quarters in the praetorium and the unusual addition to them of a heated apsidal room, doubtless to house the clerical staff which formed an increasingly important unit of the regimental establishment. The Roman fort was beginning to adopt the mien of a military township, with large and comfortable buildings which must have caused much heart-burning amongst upholders of the older régime.

The general purpose of this occupation is scarcely in doubt. During the long period of inactivity, which had coincided with the Antonine campaigns in Scotland, a generation had grown up in Wales which knew little of the majesty of Rome. It had therefore become necessary to ' show the flag ', and that this, rather than external trouble from Ireland, was the real cause of the renewed advance, is shown by the reparation not merely of coastal forts such as Segontium but also of forts in the interior, like Caersws. For the last time, the action of the Roman arms in Wales was primarily *offensive* in purpose.

The duration of this new movement seems to have varied

at different points. At Segontium it was sustained until the last decade of the 3rd century when, about A. D. 295, it came to an abrupt end. At this date, probably in consonance with the reforms of Constantius, the fort seems to have been evacuated and deliberately destroyed, and for more than half a century afterwards it was tenanted only by the occasional wanderer. North and mid-Wales were left to their own devices.

PHASE III. *The first defence against the sea-rovers.* From the Bronze Age onwards, the coastlands of Wales had received intermittent settlement from Ireland, and more or less trustworthy references to movements of this kind during the 2nd and following centuries of our era are embodied in the early Irish saga literature.[1] About A. D. 270 part of an Irish tribe, the Deisi, driven out of Meath, migrated to Pembrokeshire, and from this time the pressure of pirates and invaders upon the western coasts of Britain was second only to that of the Teutonic peoples upon the eastern and southern shores.

The first pressure of these new invasions was naturally felt upon the rich and unprotected coasts of the south-eastern counties. Here, along the so-called Saxon Shore, a series of large fortresses was built at the end of the 3rd century and during the 4th to cope with the new problem. In Wales, only one region was at first notably subject to this sea-borne danger—the fertile strip of coastland which, in Monmouthshire and Glamorgan, had gradually attracted a modicum of Romanized settlement (see below). Towards the eastern end of this strip lay Caerleon ; but the legionary fortress was not well placed for the work now in hand. Since the foundation of the fortress, Roman civil life had gradually penetrated westwards, and to protect it adequately from the sea some more central stronghold was now required. Farther west at Cardiff, in the wide plain where three rivers, Rhymney, Taff, and Ely, approach each other and the sea, a fort had stood at the beginning of the Roman occupation. This fort, or its remains, lay conveniently in the midst of the

[1] Kuno Meyer, *Cymmrod. Soc. Trans.* 1895–6, pp. 55 ff.

scattered coastal population, and it was now therefore rebuilt with stone walls 10 ft. thick and 20 ft. or more high, backed by an earthen bank, armed with projecting polygonal bastions (Fig. 101), and enclosing an area of $8\frac{1}{2}$ acres. The new fort marked the westerly limit of the system represented by Porchester, Richborough, and the other coastal forts of south-eastern England. Its reconstruction may well have been roughly contemporary with three milestones (Fig. 102)

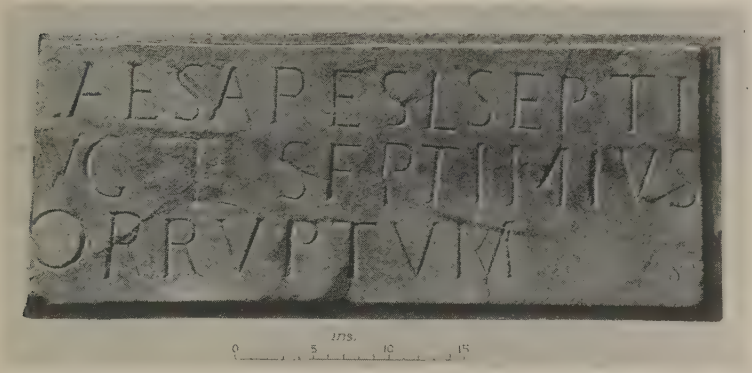


Fig. 99. Inscription recording the restoration of a building in the time of the Severi (A. D. 198–211). Found on the site of the head-quarters building at Caerleon.

which show that about A. D. 300 the main road leading from it through the Vale of Glamorgan was in active use.[1]

Caerleon had been built as the base for an offensive system operating primarily towards the hinterland of mid-Wales. Cardiff, rebuilt, was the centre of a purely defensive system, operating, we may suppose, in conjunction with a small naval patrol. Caerleon was now to a large extent obsolete. It is possibly no accident that the uncertain document known as the *Notitia Dignitatum* shows that towards the end of the Roman occupation the 2nd Legion, at least in part,[2] had been transferred from Caerleon to Richborough

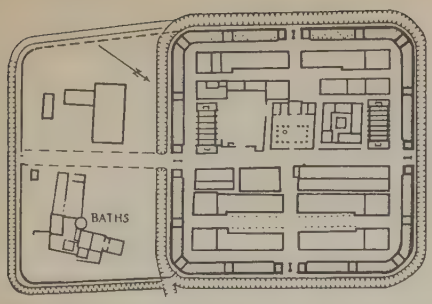
[1] *Antiquaries Journ.* ii. 361 ff.; *Cymmrod. Soc. Trans.* 1920–1 p. 93.

[2] The old organization of the frontier in depth was largely

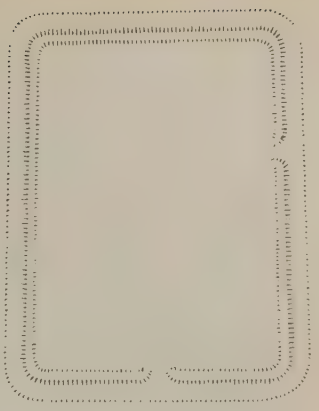
in Kent. The transfer may well have taken place at the time when Caerleon was in effect replaced by the smaller base at Cardiff.

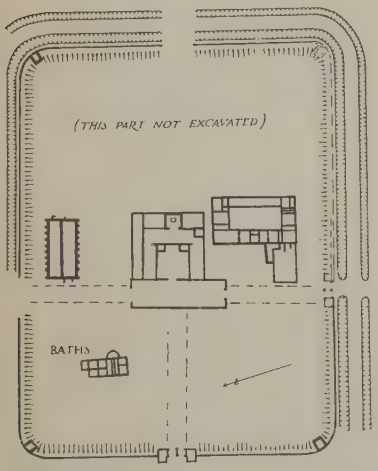
PHASE IV. *The second defence against the sea-rovers; and the end.* The new protective measures adopted by Constantius and Diocletian diverted rather than stemmed the onrush of the invaders. The more attractive and accessible shores were now sufficiently safeguarded against permanent hostile settlement; but between them and the northern frontier-wall were long stretches of unguarded coast which, though often inhospitable by nature and unproductive of booty, still offered the foothold that was denied elsewhere. A succession of disasters to the Roman arms in the second and third quarters of the 4th century showed the urgent necessity of closing these open flanks in such a way as to complete a girdle of fortified posts round the shores of Roman Britain. Accordingly, on the east the defences of the Saxon Shore were extended towards the flanks of the northern frontier by the building of a chain of coastguard forts along the Yorkshire cliffs; and in the west on what may be termed the Irish Shore there is slight evidence that a similar chain may have been established along the Devonshire coast of the Bristol Channel, whilst the interval between Cardiff and the northern system was partially filled by the re-occupation and rebuilding of Segontium and possibly of Maridunum (Carmarthen) and Kanovium (Caerhûn, near Conway). Thus, after half a century of neglect, Segontium—to take the best-known example—once more came into its own as a military site; only, its function was now definitely to *protect* those same regions which, nearly three centuries earlier, it had been established to subjugate. The deep impression of friendly awe left upon the minds of the inhabitants of North Wales by the Segontium of this last defensive phase is reflected in the resplendent legends

abandoned in the 4th century and the legions in some places were broken up to man front-line forts, &c. The *Secundani Juniores* under the *Comes Britanniae* may have been a detachment of the 2nd Legion from Caerleon.—See Mommsen, *Hermes*, xxiv. 201.

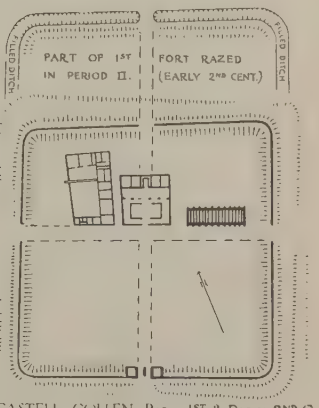


GELLYCAER, Glam. – Annexe, Fort and Camp. Early 2nd Century.

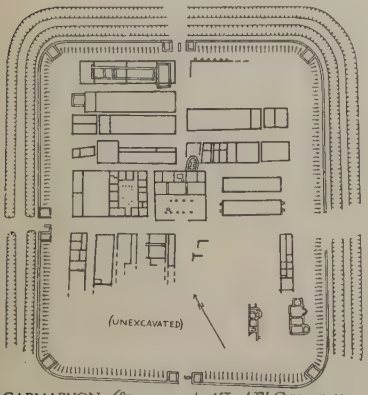




BRECON GAER. 1st & Early 2nd Centuries

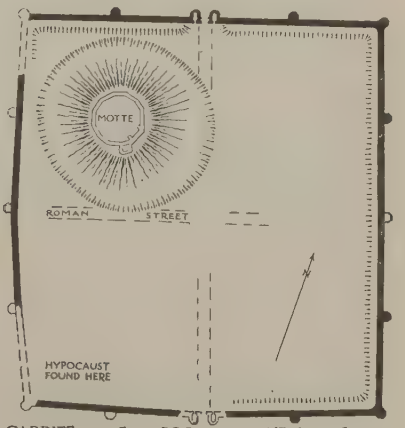


CASTELL COLLEN, Rad. 1st & Early 2nd C.



CARNARVON (*Segontium*). 1st–4th Centuries.

Scale of Feet 0 100 200 300 400
Metres 0 50 100



CARDIFF *Circa* 300 A.D. on 1st Cent. Site.

Fig. 100. Roman forts in Wales

which cluster round the Roman 'city' in the Mabinogion, the *Historia Brittonum*, and in later medieval chronicles.[1]

The date of the rebuilding of Segontium has not been precisely determined, but it was certainly after 350, and work was still in progress after 364. The commandant's house and some of the barrack-blocks were wholly or largely constructed anew. The head-quarters building was repaired and altered, the projecting apsidal room being abolished and the cellar filled and covered with a floor. The south-west gateway was partially blocked, and the north-west gateway was built entirely afresh at a higher level; the north-eastern alone of the three surviving gates was retained to its full width, but this also was largely modified and strengthened. All this new work is characterized by the re-use of old building-materials and by poor though sometimes massive construction. It is the product of a good tradition indifferently handled by military builders who were by this time recruited largely from the dregs of the frontier population, and even from the barbarian hordes against whom they were enrolled.

To this same late period may perhaps be assigned the small fort known as Caer Gybi, on the sea-cliff at Holyhead.[2] This small oblong enclosure, less than an acre in extent, has projecting corner-turrets, solid to a height of 7 ft. above the ground. The remains of a similar work overlook the river Seiont within 300 yards of the fort of Segontium.[3] The date of both works is uncertain, and even the attribution of Caer Gybi to the Roman period lacks decisive proof. But we may provisionally include these small cliff-forts amongst the precautionary measures adopted during the last century of Roman rule in Britain against the pirate ships from the Irish Sea, and may suppose that the scheme which they represent included a squadron or patrol of that 'British Fleet' which has left its traces at Lympne, Folkestone, and elsewhere. Holyhead harbour and the mouth of the Seiont would alike make excellent and

[1] For these legends, see *Y Cymmrodor*, xxxiii.
[2] *Y Cymmrodor*, xxxiii, pp. 98 ff. [3] *Ib.*

Fig. 101. Exterior of the north gate of the Roman fort at Cardiff (restored above the jambs of the archway)

indeed obvious bases for such a fleet, and if we may add Kanovium and Chester—both occupied in the 4th century—the chain of naval control-stations would be ample for the efficient patrolling of the North Wales coast-line.

So for a generation the western approaches to Britain were held against the invader. But at some point within the last two decades of the 4th century came the inevitable end. In 383 the Emperor Maximus drained Britain of her best troops for his venture on the Continent. The last coins at Segontium are single specimens of Theodosius (379–95) and Valentinian II (375–92), though those of Gratian (367–383) are numerous. This evidence is consistent with an evacuation of the fort in 383. On the other hand, Kanovium has yielded one of Honorius (395–423) and two of Arcadius (394–408) and amongst the coins recorded from Chester is one of the latter emperor. It is clear, therefore, that North Wales and its base were in touch with the Roman world during the last decade of the century, and we may regard 395 as the approximate date of withdrawal. In the south, a single coin of Arcadius has been found in Carmarthenshire and two others at Caerleon. It is likely enough, though not certain, that Caerleon retained at least a cadre garrison to the end, and, if so, we may suppose that the departure of this unit coincided with that of its sister-garrison in the north. By A. D. 400 Wales was devoid of Roman troops and was thrown open to that conflict between the native population, Irish settlers, and invading Cymry wherefrom was born the Romano-Celtic civilization of the Age of Legend.

(*b*) *The Romanized Civil Settlements*

A clear distinction between the scope of military and that of civil affairs formed an essential feature of the Roman administrative system. This distinction was territorial no less than political, and in a Roman province the line of demarcation was normally threaded by the base-fortresses of the legions. In front of this line on a settled frontier a few farms or country houses, even occasionally a small town,

Fig. 102. Roman milestone from Melin Crythan, Neath, Glam., bearing the name of Diocletian (A. D. 284–305) IMP(ERATORI) C(A)ES(ARI) [D]IO[C]LETI[A]NO [A]V-G(VSTO). (Ht. 34 in.)

might spring up here and there ; but for the most part the Roman element in the frontier-zone was either military in character or was at least directly determined by military needs. Thus, in Wales, it is only in the south-eastern corner, to the rear of the 2nd Legion at Caerleon-on-Usk, that we expect to find traces of a settled Romanized population on any elaborate or extensive scale. Here, eight miles east of Caerleon, in the centre of a fertile hill-encircled plain, the village of Caerwent straggles over the site of the only Roman walled town within the borders of the Principality (Fig. 103).

In the days of the Roman conquest the Silures, who occupied this part of Wales, were amongst the most stubborn of the foes who confronted the invading armies. For more than thirty years, from soon after A. D. 43 to about the year 74, the tribe remained unvanquished, although garrisons are recorded to have been planted at least temporarily amongst them as early as the middle of the century.[1] It was at length realized by the Roman authorities that armed force was insufficient to break so obstinate a spirit of resistance unless supplemented by some more subtle and comprehensive policy. Tacitus, in a well-known chapter, has described with a cynical frankness the policy characteristically adopted under such circumstances. The insidious attractions of Roman town-life were dangled before the semi-barbarous native, who was thus lured gradually from his own tribal traditions and from the memories of his former independence. Roman dress, Roman customs, even Roman speech were gradually sought and adopted, until by and by the tribesman had unconsciously become, in all but name, a Roman citizen. Caerwent, therefore, may be regarded as the deliberate civil counterpart of Caerleon. At Caerleon, as we have seen, the fragmentary evidence does not prove an occupation earlier than *c.* A. D. 75. At Caerwent, where evidence is abundant, the comparative scarcity of early Samian (form 29) and of pre-Flavian coins[2] is decidedly

[1] Tacitus, *Annals*, xii. 38.
[2] List of coins in the *Bulletin of Celtic Studies*, ii. 92 ff.

in favour of an initial occupation not earlier than the same decade. It has indeed been suggested that the site was originally that of a legionary fortress. The shape and size of the town with its 50 acres are roughly consistent with such an origin, and its position is of considerable strategic value, though much less so than Caerleon. But the lay-out of the town, with its main street on the longer axis of the

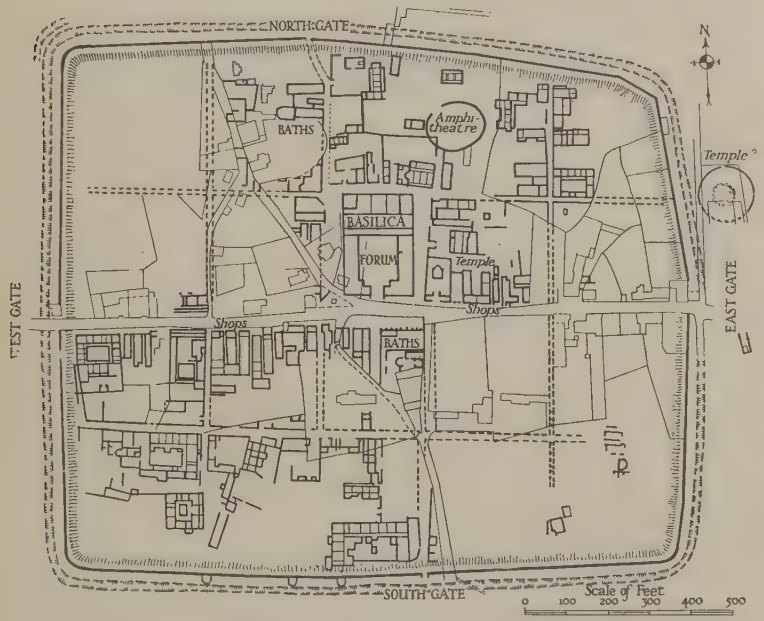


Fig. 103. Plan of Caerwent

(Since the preparation of this plan three additional bastions have been discovered along the south wall.)

oblong, is certainly not descended from a military plan, where the main street always coincided with or was parallel to the shorter axis. Three or four tiles bearing the stamp of the 2nd Legion, a monument set up by the local inhabitants to a 3rd-century general of the same Legion, and an altar dedicated apparently by a junior officer are the only military remains which extensive excavation has produced. If, therefore, the bare outline of Caerwent happened to

coincide with that of some earlier temporary camp, the fact is of no historical import. The origin of Caerwent is to be sought in civil not in military strategy.

The full significance of this stroke of strategy can only be appreciated if we realize clearly the essential difference between the Roman and the native Gallo-British unit of local government. The Roman unit was the town, and the annexed territory was controlled by the town—the whole forming a microcosm of the classical city-state. On the other hand, the native unit in Gaul and, it now appears, in Britain was the tribe, and such settlements or towns as might grow up within the tribal territory were administered merely as an incidental part of it by the tribal government. The two systems were thus fundamentally different. True, by the eve of the Roman conquest a distinct tendency towards centralization and the development of urban life had become manifest amongst the more developed tribes of Gaul and even of Britain ; native oppida such as Bibracte in Gaul and Camulodunum in Britain were tending to become permanent administrative capitals. Nevertheless—and not least in remote districts such as Wales—tribal life must still have been for the most part de-localized ; indeed it remained so in the west down to very much later times.[1] The dominant political unit was still the tribe and not the city.

A de-localized system such as this presented obvious difficulties to the conqueror. It was elusive, difficult to control, hydra-headed. Nevertheless, it was the only existing political machinery whereby the new Roman régime could effectively and permanently be brought to bear upon the scattered tribal population. It was therefore boldly adopted by the conqueror, and at the same time subtly transformed. A well-known inscription found in the midst of Caerwent shows that under the Middle Empire the local administrative unit there had not even yet become, as we might expect, the township of Venta Silurum, but was still the *respublica civitatis Silurum*, the commonwealth of

[1] It has been pointed out that no pre-industrial town in Wales is of Welsh origin.

the Silures. The old tribal, non-territorial organization survived in form. But it survived in a significantly Roman dress. It had been promoted to the terminology of Roman officialdom; the tribal council had become the *ordo* or senate—*ex decreto ordinis*, 'decreed by the senate', runs the Caerwent inscription—and we cannot doubt that the one civilized town within the tribal area had become the senate's permanent home. In effect the Romanization, the process of evolution from tribe to city, was as complete politically as socially. Elsewhere in many cases this transformation ensued naturally and gradually after the conquest; but sometimes, where the tribal organization had shown exceptional powers of coherence and resistance, the transformation was hastened by some deliberate act such as the founding of an attractive urban centre of purely Roman type within the tribal territory. Caerwent, founded immediately after the conquest of the west, with its definitely Roman oblong plan framed by defences which are in outline self-evidently an original feature,[1] proclaims itself to have been a deliberate stroke of this kind. It represents the crowning act in the prolonged subjugation of the implacable Silures.

The superficially military aspect of Caerwent has more than once been misunderstood. Every pioneer is necessarily something of a soldier, and Caerwent was founded as a pioneer-city on a particularly treacherous frontier. Even in comparatively pacified south-eastern England, Roman cities had been burnt to the ground less than twenty years earlier, and, at a time when Colchester, as it seems, was being rebuilt with strong defences of stone, it is only natural to find that this westerly outpost town amongst the Silures was likewise fenced, if only with earth and timber. At some later period—recent excavation has suggested a date towards the middle of the 4th century—

[1] Earthen banks, such as those which formed the first defence of Caerwent, are characteristic of early, not of late work; and at all levels the lay-out of the streets and buildings was determined by that of the enceinte.

the bank was supplemented externally by a high stone wall with shallow internal projections, to carry either stairways or missile-throwing engines.[1] Later still, six polygonal bastions, which may be compared with those of the rebuilt fort at Cardiff, were added to the south wall. Polygonal bastions are not known before the 3rd century; those of Cardiff have been assigned provisionally to the active era of Constantius and Diocletian, and there is now some reason to ascribe the poorly built series at Caerwent to a period as late as the second half of the 4th century.

Of the four gateways, two are cut away by the Newport-Chepstow road, which roughly coincides with the Roman main street. The other two gateways, in the north and south walls, formed single-arched openings, and were both blocked before the end of the Roman period. A square-headed opening in the blocking of the northern gate provided for the exit of a large stone conduit, which may have carried water from public baths near by. The interior of the town was divided into twenty blocks or insulae by a roughly rectangular network of streets, divided centrally from east to west by the main road. Upon the north side of this road, in the middle of the town, lay the forum or market-place and the basilica or town-hall, together forming a single block. The market-place was open to the sky, save that it was flanked on three sides by porticoes through which access was obtained to corresponding rows of small apartments, probably shops or business offices. The north side of the forum was closed by the basilica, consisting of a nave 176 ft. long with two aisles of which the southern was approached from the courtyard by a broad flight of steps. The aisles were divided from the nave by Corinthian columns nearly 3 ft. in diameter at the base, and each end of the nave was partitioned off to form a small compartment which was probably used for official purposes, as police-court, committee-room, or the like. The north aisle, itself subdivided, opened into a range of six or seven rooms which, like the

[1] For a description of the defences, see J. Ward, *Arch. Camb.* 1916, pp. 1–36.

Fig. 104. Caerwent Roman Temple from the SE.

corresponding rooms in the praetorium of a Roman fort, presumably formed the official head-quarters of the principal administrative functionaries. It is possible that, as in a military praetorium, the central room may have been the civic shrine and treasury, but evidence is lacking. The rooms were, in some cases at least, decorated with painted wall-plaster of a pinkish-brown colour. The date of the building was not ascertained, but the walls contained re-used column-capitals, coping-stones, and tiles, and, as found, were probably late.

East of the forum, the next block included a small square temple with a northern apse (Fig. 104). The dedication of this temple is unknown, but it is of the so-called ' Celtic ' type with surrounding ambulatory, as distinct from the more classical (Roman) prostyle types. The latter are rare in Britain, but occur at Wroxeter and perhaps at Colchester. Only one other building at Caerwent may with tolerable certainty be regarded as a temple—a circular structure with (apparently) a polygonal cella, partially excavated outside the east wall of the town. Attempts have been made to recognize a Christian church of the Silchester type in the plan of part of a building in the north-eastern part of the town, but without just cause.

Other public buildings included a fragmentary and perhaps unfinished amphitheatre of poor construction built at some late period over demolished dwelling-houses and streets in the northern part of the town ; and three bath-blocks, of which two at least were probably public. Of these, one occupied half of the block facing the forum, and in its prime was approached from the main road through a large colonnaded courtyard, with an external row of semi-attached columns facing the street. Just as the forum was the business centre of the town, so bath-buildings such as these were the social centres or clubs where friends and acquaintances forgathered in leisure moments. We may recall that Tacitus mentioned ' baths ' as amongst the seductions whereby the British provincial was subtly enticed from his own environment into that of his con-

queror ; and recent excavation has shown that the baths opposite the forum, though later elaborated, originated in the first occupation of the site.

The fully developed Caerwent house consisted of a central courtyard enclosed on four sides by verandahs from which opened four ranges of small rooms. This four-sided courtyard type is of Graeco-Roman origin ; it occurs, substantially, for example, at Priene in the 3rd century B. C., and, alongside other forms, at Pompeii a century or two later. It constantly appears (probably as the commandant's house) amongst the principal buildings of Roman forts, and is found in Romano-British towns at Colchester and at Wall, near Lichfield. On the other hand, the houses of the Romano-British town at Silchester in Hampshire conform rather to the variant types adopted for country houses or villas in the north-western provinces of the Empire. These types consist of a single block with a verandah along one side (as in the barrack-blocks of a Roman fort, which were possibly the prototype in the provinces), or of two or more such blocks placed at right angles round a wide space or courtyard. These types, simple yet capable of almost indefinite extension, were appropriate for farms and country mansions, but lack the trimness and conciseness which fit the smaller quadrangular form to the normal exigencies of a town-plan. Silchester was essentially a leisurely growth, a garden-city, a congeries of country houses. Caerwent and Colchester were more strictly urban in character and more closely associated in one way or another with the official life of the province. It is natural that in Caerwent, as the official or semi-official civil counterpart of Caerleon, the individual buildings, like the general outline, should conform more closely than at Silchester with the conventional classical type.

Not that the simple 'corridor-house' was unknown at Caerwent. It occurs occasionally together with the more expansive courtyard forms. One of the latter, close within the south gate, is of exceptional size and may, like a similar building at Silchester, have been an inn. Other buildings, perhaps more often shops or workrooms than dwelling-

houses, are of simple oblong plan. Rows of these booths line the main street near the centre of the town, and others appear to have extended along the south side of the main road outside the east gate.

Roman law forbade the burial of the dead within the walls of a town. This law was sometimes evaded at Caerwent and elsewhere, but the main cemeteries of Caerwent must have lain as usual outside the walls, and tombs doubtless lined the roads for some distance without the gates. When discovered they will yield a rich harvest of finds, but no systematic search has yet been made for them.

Of the general culture of the inhabitants of Caerwent, we may say that it resembled that of other small provincial towns in the more northerly provinces of the Empire ; that is, it was essentially of Roman type modified and to a considerable extent degraded by contact with a native population which, however brilliant in certain aspects, was as a whole fundamentally undisciplined and barbaric. The inhabitants would probably include a few Gallo-Romans, perhaps even a few Italians, and possibly an occasional trader or wanderer from Greece or the Near East. A leavening of retired soldiers from Caerleon or the auxiliary forts, such as the ' optio ' or junior officer who dedicated an altar to Mars Ocelus found in a Caerwent house, would help to maintain the ' Romanization ' of the place up to the official military standard. But the ordinary citizen of Caerwent would be the native Silurian tribesman, at last finally subjugated by the arts of the Roman peace. Latin was now the official language of the town, and Latin names were doubtless adopted frequently by men of Celtic or at least native origin then as by their descendants who, in the 5th and following centuries in Wales, sometimes alternated Roman and Celtic names in successive generations. So also, in accordance with a custom well known in the Roman world, were the Roman and the native pantheon reconciled by compounding deities of diverse origin ; as in the composite Romano-Celtic god Mars Ocelus already cited or in a comprehensive dedication, also from Caerwent, to ' Mars Lenus or

Ocelus Vellaunus, and to the Divinity of the Emperor'—an excellent example of the progressive submersion of native elements beneath the all-pervading tide of Roman forms and ideas.

Similarly in the pottery, ornaments, implements, and the general surroundings of everyday life, native elements are the rare exception. The walls of the houses were covered with plaster daubed occasionally with figure-subjects, more often in stripes, panels, or even mere blotches of crude colour, in remote imitation of the painted walls of Italy. The floors, at the best, were covered with mosaic in the form of geometrical patterns occasionally diversified by the introduction of grotesque animals or of symbolical figures such as the Seasons—the work perhaps of journeymen trained in south-eastern Britain, Gaul, or even Italy. The better kinds of pottery—the red-glazed 'Samian'—were imported from southern or eastern Gaul or from derivative factories in western Germany. The artist or craftsman was rarely more than a copyist whose models were themselves debased copies. And when the local sculptor relied rather upon his own inspiration than upon these dead traditions his masterpiece, received and even worshipped, we may not doubt, with all solemnity,[1] compares but poorly with the humblest African ju-ju. Materially, the citizen of Venta Silurum was infinitely more fortunate than the poorer inhabitants of many a modern town. Politically, with the increasing dominance of his Romanized market-town, his outlook, once vaguely co-extensive with his tribal unit, is likely enough to have become focused by almost imperceptible stages upon a definitely urban government which doubtless, as in Gaul, became increasingly rigid and bureaucratic under the Later Empire. Artistically, such native inspiration as he may have possessed was smothered by the alluring facility and the ready abundance of Roman things. Caerwent in the 4th century was an outer suburb

[1] One of these rough figures was found in what appeared to have been a small shrine; and elsewhere such figures are certainly intended to represent deities. See *Y Cymmrodor*, xxxiii. 128.

of Rome, and the Silurian native may well have regarded himself as a Roman citizen in fact no less than in name.

And what was the end? In the latter part of the Roman occupation, the city was perhaps already falling on evil days. The great colonnaded courtyard which had replaced an earlier and small colonnade in front of the public baths on the south side of the main street, opposite the forum, was demolished and partially replaced by humbler buildings. The blocking of the north and south gateways and the addition of projecting towers to the south wall speak of times of stress when the coastlands were the prey of pirates and the inland regions were haunted from time to time by deserters and freebooters. But there is no sign that the occupation ended in a final sack or in one of those conflagrations which flicker across the pages of the early Christian historians. Here, as elsewhere, the Roman town seems to have lapsed gradually into decay, doubtless amid occasional scenes of violence such as may be supposed to have occasioned the loss of six coin-hoards of the age of Honorius in various parts of the town.[1] These coins were in many cases much worn before loss, and since by the end of the 4th century the issue of official copper currency had practically ceased in the West, and old coins remained long in use alongside unofficial token-substitutes, the date of deposit may run well into the first half of the 5th century. Such a moment may in itself mark no outstanding epoch in the later history of the town. At Wroxeter, for example, the earlier excavations in and around the basilica revealed ashes, skeletons, and two small hoards ending with Valens and Gratian (A. D. 383). More recent excavations carried out elsewhere in the town with exemplary care showed there no evidence of a final destruction by fire, and incidentally brought the list of coins down to Arcadius (A. D. 394–408). The later coins are not yet sufficiently numerous to support conjecture, but the evidence tends to suggest that the violent destruction noted by the earlier explorers may not

[1] Lists in *Bulletin of Celtic Studies*, ii. 92 ff.

have involved the whole city. At Caerwent there was equally no sign of a final conflagration, and some sort of village-life may well have struggled on within and around the decaying town, perhaps intermittently, through a considerable part of the 'dark ages'. In the insula south of the forum, as doubtless elsewhere, some of the latest Roman buildings had been altered or superseded by rough walls built or re-built apparently after no great interval of desolation; and if we may believe that a substratum of truth underlies the Life of St. Tathan, some sort of occupation probably, though not necessarily, subsisted in the town at the end of the 5th century, when Caradog, the king of Gwent, is said to have induced the wandering Irish saint to establish a monastic school outside the walls of the city.[1] It is possible, though quite uncertain, that a number of Christian burials found outside the east wall may be a relic of this foundation. But a different picture is suggested by another group of human skeletons which had been 'thrown carelessly one on the other' inside of and upon the ruins of the circular building (temple?) outside the same wall. From an examination of the crania Professor Macalister inferred that these skeletons were 'most probably of late 5th century or early 6th century age'.[2] Here again the evidence is frail, and, though these skeletons may represent some raid carried out from England or from the sea in that period, we cannot even guess whether or no they really mark the final doom of Roman Caerwent. We can only point to the unusual number of late Roman coins found within the walls; to some fifteen or twenty Byzantine and other coins which thinly cover the centuries from the 6th to the 11th;[3] to the story of St. Tathan and Caradog, and to the position of Caerwent, well to the west of the main tide of Saxon conquest; and we may

[1] Baring Gould and Fisher, *Lives of the British Saints*, iv. 212.
[2] *Arch.* lxiv. 452.
[3] *Bulletin of Celtic Studies*, ii. 98. Attention may here be drawn to a rare 5th-century coin (3rd brass) from Caerwent, now in the British Museum. It is of the Empress Honoria who died after A.D. 454. *Obv.* [HO]NORIA. Head, diademed, r. *Rev.* [S]ALVS REI[PVBLICAE]. Victory dragging captive l. *Chi-rho* symbol in field to l.

suppose that, as Haverfield suggested,[1] some sort of sub-Roman life lingered on here after it had vanished from southern England. We may then turn to the six late coin-hoards and the human bodies tumbled across the foundations of a Roman building which was already then in ruins, and may be content at present to leave the fate of Venta Silurum in suspense between the saints and the sinners.

When we leave Caerwent we leave behind us the only fully developed Romano-British town in Wales. Here and there are slight traces of hamlets or perhaps small mining-villages which may have been more or less directly in touch with the Roman world. In the neighbourhood of Flint, discoveries of furnaces, foundations, Roman metal-objects, scoriae, and coins from the 2nd to the 4th centuries, may indicate some such settlement, established perhaps in connexion with lead-smelting; and other sites, such as Holywell in the same county, may be of the same kind, though little known.[2] At Dolaucothy in northern Carmarthenshire a building with a hypocaust was found many years ago near gold-mines which were worked in Roman times and produced the fine gold ornaments described in a later section. For the rest, with the possible exception of the ill-developed settlements which grew up around the more permanent forts, and perhaps a small bath-building at Tremadoc in Carnarvonshire,[3] Romanized civil life was confined to the southern, and more particularly the south-eastern, part of the Principality.

This scattered civil occupation was doubtless far from uniform in character. Some of the remains are presumably those of the small farmsteads of comparatively prosperous and ambitious native squires; others may have been the homes of local 'captains of industry' more especially of the iron-working industry which has left traces in Glamorgan and Monmouthshire; a few may have been the seats of

[1] *Romanization of Rom. Brit.* (1923), p. 84.
[2] M. V. Taylor, *Flint. Hist. Soc. Journ.* ix and x.
[3] *Arch. Camb.* 1908, p. 287.

Fig. 105. The ' villa ' at Llantwit Major, Glam. ; mosaic pavement, with shallow burials in background

the Romanized aristocracy of the province, though in Wales such establishments rarely rival those of southern England, and bear no comparison with the large country mansions of Gaul. The known remains are not numerous. They include the foundations of a building on the natural hill called the 'Castle Tump', half a mile north-east of Caerwent; another, which has yielded coins from Claudius Gothicus to Valens, on the summit of Portskewett Hill, some two miles to the south-east;[1] others again at Llanfrynach, near Brecon,[2] at Ely near Cardiff,[3] at Llantwit Major in Glamorgan,[4] and at Oystermouth in the same county;[5] whilst still further west, a tessellated pavement is said to have been seen at Abercyfar near Carmarthen,[6] and a small building within an earthen bank at Cwmbrwyn, eleven miles south-west of Carmarthen, may be a stockaded farm-house rather than a military block-house.[7] Of these sites, so far as they are known to us, only two offer any pretension to luxury. The Llanfrynach 'villa', which was partially excavated in 1775, produced coins from Nero to the Constantine family or perhaps Valentinian I, and included a complete set of baths with two furnaces, a corridor on one side, and four mosaic pavements, one of them with the representation of a dolphin. The total extent of this building was not ascertained; but at Llantwit Major the foundation-mounds apparently of a courtyard-house cover more than an acre of ground, and are known to conceal at least one large room with a mosaic floor (Fig. 105). This floor was cleared in 1888, and upon it were found 'no fewer than 41 human skeletons of both sexes and all ages . . . and among them the bones of three horses'. It was inferred, with some reason, that the history of the building closed with the massacre of the inhabitants; and the presence of five coins, all minted during

[1] *Antiquaries Journ.* iii. 374.
[2] Theoph. Jones, *History of Brecknock* (2nd ed.), pp. 19, 462; *Arch.* vii. 205.
[3] *Journ. Rom. Studies*, xi. 67.
[4] *Ib.*, p. 81.
[5] *Arch. Camb.* 1919, p. 227.
[6] *Brit. Arch. Assoc. Journ.* xxiv (1868), p. 113.
[7] *Arch. Camb.* 1907, p. 175.

the latter half of the 3rd century, suggests the association of this event with the immigrations from Ireland which are known to have become insistent in South Wales at this time.[1]

To meet these increasing perils along the coast, the fort at Cardiff was, as it seems, rebuilt on a large scale, and the

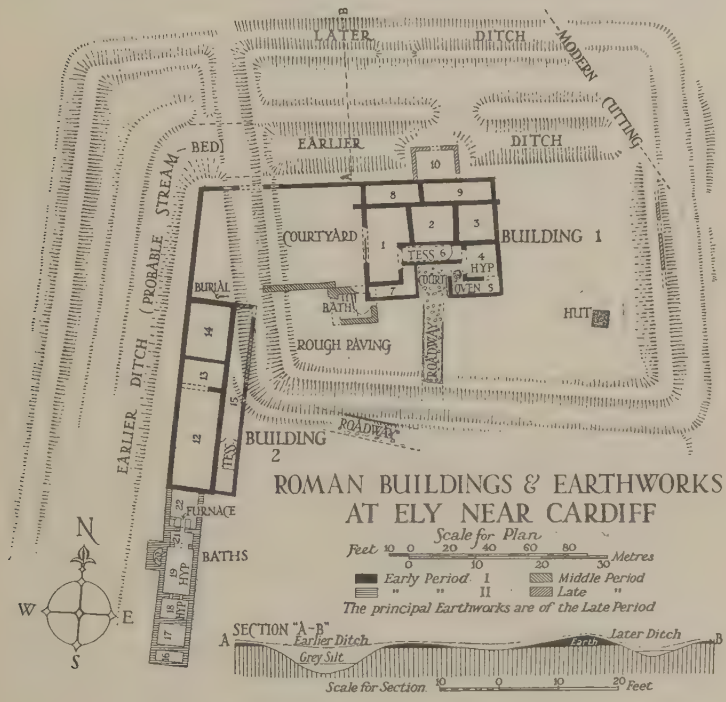


Fig. 106

arterial road through the Vale of Glamorgan was put into repair (see above, p. 235). But in at least two cases the private householder deemed it prudent to supplement these official measures with precautions of his own. The small

[1] The date indicated by the Irish Annals for the migration of the Deisi from Meath to south-west Wales is about A. D. 270. Kuno Meyer has shown (*Cymmrod. Soc. Trans.* 1895–6, p. 55) that this was no isolated event.

oblong building at Cwmbrwyn is shown by a coin of Carausius to have been in occupation during this unsettled period, and the rough earthen rampart which surrounds it needs no further explanation. More striking are the banks and ditches which, apparently at the end of the 3rd century or the beginning of the 4th, were drawn round the main blocks of a small establishment in the Ely valley, near Cardiff (Fig. 106). Here some time during the first half of the 2nd century some Romanized settler built a small house upon an island formed by a branching streamlet in a flat tree-lined marsh. The house was of half-H shaped plan with wings facing south and fronted by a continuous verandah. Above this the main block doubtless rose to a second story. Close by lay a second building, oblong in plan, again with a verandah along the main front. To the southern end of this second structure was added shortly afterwards a small but complete set of baths. In connexion with this establishment iron-smelting was carried on and some of the iron showed an admixture of manganese which must have been brought from a considerable distance. After various modifications which need not here be recounted, the second structure was demolished and the remaining buildings were surrounded, apparently within a quarter-century of A. D. 300, by the banks and ditches already mentioned, and not many years afterwards the whole establishment seems to have fallen into disuse.

In its latest phase, this fortified residence suggests analogies amongst the moated homesteads of the Middle Ages, and emphasizes the curious scarcity of domestic fortification even when the recurrent lawlessness of the later Empire compelled the fortification or re-fortification of almost every town. A doubtful parallel from Yorkshire [1] and two or three others from Gaul and Germany [2] seem to complete the list of such works outside Wales, though we may recall the description by Apollinaris Sidonius of the country house built during the 4th century in Gaul in such manner that

[1] The Castle Dykes, near Ripon.—*Arch. Journ.* xxxii. 135.
[2] *Westdeutsche Zeitschrift*, xxvi. 273; Blanchet, *Les Enceintes romaines*, p. 232.

'neither engine of war nor opposing agger nor heavy catapult-shot nor massed attacks nor scaling ladders could shake the walls'.[1] It is legitimate to suspect that further search in England and Wales will reveal other such embanked or enwalled homesteads in the more exposed regions of the north and west.

(c) *Native Settlements*

From the restricted area of civil settlement we may pass to the ill-explored tracts of bare coastland or mountainous hinterland where, as in earlier and later times, dwelt the scattered peasantry who, for lack of a better term, are described in these pages as 'natives' in a special sense. The term is here used only with a cultural implication, for in the elusive factor known as race and to a less extent in the little-known factor of language they were identical with many of the inhabitants of the Romanized settlements described above. From the point of view of culture, however, the cleavage between the Romanized native townsman or squire and the un-Romanized native hillman was deep and wide. Stray fragments of Roman pottery, a few coins, occasional brooches and beads, found their way into the kraals and embanked villages amongst the hills; but such contact, useful though it be to the archaeologist, is of no real significance in itself. The Roman was essentially a valley-dweller, who sought pleasantly wooded slopes or the banks of sheltered streams; the native sought the windswept sea-cliffs or commanding uplands free from vegetation. In Roman Wales, after the first clash of arms, the two civilizations were for the most part content to go their several ways in peace.

In mid and south Wales, few of these native sites have been explored. On the small and bleak island of Gateholm, off the southern coast of Pembrokeshire, groups of circular or roughly oblong hut-foundations 'which must once have constituted a village capable of accommodating several hundred inhabitants' have produced Roman potsherds,

[1] *Carm.* xxii. 117.

a flint arrowhead, flint flakes, iron nails and slag, and a coin of Carausius.[1] We must suppose, therefore, provisionally, that the huts were occupied during the Roman period ; and their unusual grouping in long ranges of compartments round two or more sides of a courtyard may be a distant copy of a Roman courtyard house. On the mainland, it is likely enough that some of the so-called hill-forts or hill-villages were likewise inhabited at this time. Thus within the numerous circular pit-dwellings—the hollowed floors of former wicker huts—wherewith the interior of Moel Trigarn in northern Pembrokeshire is honeycombed, excavation has revealed spindle-whorls, roughly worked flint flakes, glass beads, a piece of a Roman mortarium, and some fragments of rough hand-made ware which is of uncertain date but may well be sub-Roman.[2] The defences of this imposing site were formed by scarping the steep slope of the hill and surrounding the escarpment by two annexes on the less abrupt slopes towards the south-east. The entrances were formed by cutting inclined ways through the escarpments which were thus turned inwards to flank the approach.

In North Wales, stone-walled hill-towns of somewhat analogous type are fairly numerous, and have in some cases been more fully explored. Thus the site well known as Tre'r Ceiri in Carnarvonshire is enclosed by dry-built walls which in parts retain an internal banquet or parapet-walk (Fig. 108)—a feature which recurs in the ' camp ' on Holyhead Mountain, at Caer Drewyn near Corwen, and elsewhere. The entrances at Tre'r Ceiri are flanked internally by long walls which on a small scale recall those of the Early Iron-Age camp of Worlebury in Somerset; and the interior of the site is covered with the remains of circular and roughly oblong huts of stone. Within these huts were found Roman potsherds of the 2nd century and later, a bill-hook and other implements of iron, Roman melon-beads, part of a beaded necklet of gold-plated bronze, and a gold-plated bronze brooch of a florid Late Celtic type which finds its closest analogy in the

[1] *Arch. Camb.* 1910, pp. 271 ff. [2] *Ib.*, 1900, pp. 189 ff.

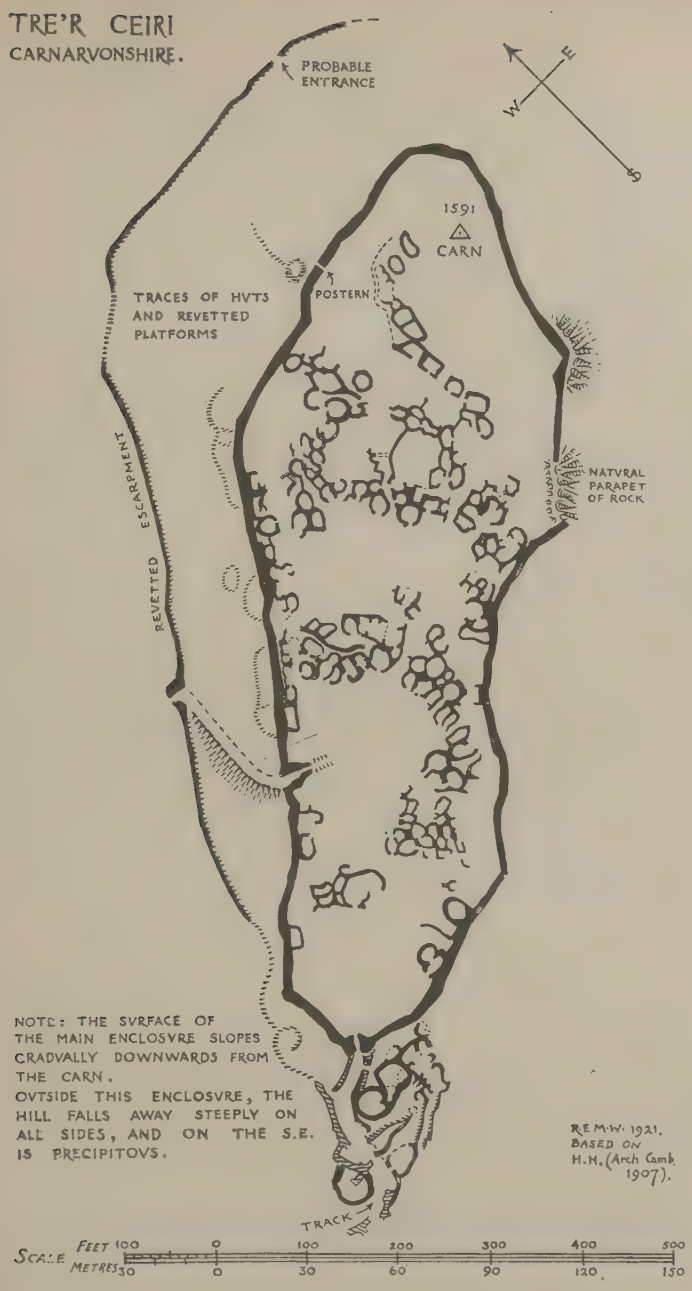

TRE'R CEIRI
CARNARVONSHIRE.
PROBABLE ENTRANCE
N
E
W
S
1591
CARN
POSTERN
TRACES OF HVTS AND REVETTED PLATFORMS
REVETTED ESCARPMENT
NATVRAL PARAPET OF ROCK
NOTE: THE SVRFACE OF THE MAIN ENCLOSVRE SLOPES GRADVALLY DOWNWARDS FROM THE CARN.
OVTSIDE THIS ENCLOSVRE, THE HILL FALLS AWAY STEEPLY ON ALL SIDES, AND ON THE S.E. IS PRECIPITOVS.
R.E.M.W. 1921. BASED ON H.H. (Arch Camb 1907).
TRACK
SCALE
FEET 100 0 100 200 300 400 500
METRES 30 0 30 60 90 120 150

Fig. 107

Aesica series of the end of the 2nd century (Fig. 90). There was no evidence of any earlier occupation than that which yielded these relics, and there can be little doubt that this native hill-town was built some time during the 2nd century of our era.[1]

Similar evidence is forthcoming from the famous settlement of Braich-y-ddinas, which covers the upper slopes of the great headland, Penmaenmawr, in Carnarvonshire. Here again are stone hut-circles associated with Roman pottery, three coins of Trajan and Hadrian, a silver snake-bracelet of Roman type, innumerable spindle-whorls, saddle querns and rotary querns, and, rarely, implements of flint and stone. The principal, and perhaps the only, occupation was subsequent to the Roman conquest. Farther east, the Clwydian hills are crowned by a series of earthworks which have likewise yielded little but Roman pottery; indeed, at Moel Fenlli, the most southerly of the series, the excavator 'turned up, in nearly every trench, fragments of Roman pottery', which includes decorated Samian of about A. D. 100.[2] But one of the most imposing of these fortified townships is that known as Dinorben, near Abergele, where extensive excavation has shown four main periods of occupation. The date of the earlier phases is uncertain, but the careful dismantling of the stone parapets and gateway that closed each of the first two phases suggested to the excavator the deliberate handiwork of disciplined, i.e. Roman, troops rather than the spasmodic activity of a local tribe.[3] Be that as it may, the last reparation of the defences was coincident with an occupation which is represented in the enclosed area by remains of wattle huts, numerous Roman potsherds, a few imitation sherds of coarse, local manufacture, and a long series of Roman coins principally of Constantinian period but extending down to Gratian (A. D. 383). The vertical height of the main earthen rampart at this period, excluding the ruined stone parapet, is still between 40 and 50 feet. The main entrance was

[1] For this and other native sites referred to in this section, see *Cymmrod. Soc. Trans.* 1920–1, pp. 44 ff.

[2] Now mostly at Ruthin Castle. See Roy. Com. Anc. Mons., *Denb. Inventory.*

[3] *Bulletin of Celtic Studies*, i. 276 ff.

stone-faced; it was rebuilt at least twice, and during the last two phases had small rectangular guard-rooms—a feature possibly of Roman derivation—at the inner ends of the entrance-passage.

In addition to these fortified hill-settlements are others which were either entirely open or were merely surrounded

Fig. 108. Tre'r Ceiri; interior of main defensive wall, showing parapet. (Ht. of wall about 6 ft.)

by a boundary wall of doubtful military value. The wall which encloses most of the oblong and circular huts of Din Lligwy, the well-known Romano-British village in Anglesey,[1] may possibly have been defensive; but the huts at Tŷ Mawr on the slopes of Holyhead Mountain, and others on several low-lying sites in the southern half of Anglesey, lack even this modicum of protection. Again, at and near Rhostryfan, some three miles south of Carnarvon, are

[1] E. Neil Baynes, *Arch. Camb.* 1908, pp. 183 ff.

groups of native huts with no appreciable defensive system. It can scarcely be an accident that all these villages lie within effective reach of the fort of Segontium (Carnarvon), a fort which was maintained intermittently until the end of the Roman occupation; and we may infer that the surveillance forthcoming from this source obviated the necessity for the local defences which seem to have been normal elsewhere.

These open villages, like the enclosed hill-settlements, display individual peculiarities which cannot here be discussed, but the settlement excavated near Rhostryfan may be taken as generally typical.[1] The huts, both circular and oblong, were there occasionally grouped within a small walled enclosure which may have marked the extent of the individual homestead (Fig. 109). The adjacent hillside was roughly parcelled out by large standing stones into allotments, which had frequently been terraced for cultivation. Terraces of this type have been observed elsewhere in Carnarvonshire (e. g. south of Llanllyfni), but those at Rhostryfan. formed obviously in connexion with the hut-settlement, are the first to which an approximate date can be assigned. The hut-floors yielded Roman pottery made between the 2nd and 4th centuries, a silver ring of the 2nd century with a sard intaglio, glass beads, and a small piece of bronze with Late Celtic repoussé pattern. Iron nails, horseshoes, and slag were found, and it is clear that iron was worked in the village. Close by is a small enclosure formed by three concentric banks; it has not yet been explored and its purpose is unknown.

Such are typical examples of the fortified hill-towns and open villages which were occupied and sometimes built during the Roman period in Wales. They differ amongst themselves in detail but, where adequately excavated, agree in their evidence of a tolerably extensive and settled occupation by a people who doubtless still relied primarily upon their flocks and herds but sometimes, as we have seen, practised a little agriculture, and certainly carried on

[1] Howel Williams, *Arch. Camb.* 1922, p. 335; 1923, p. 87.

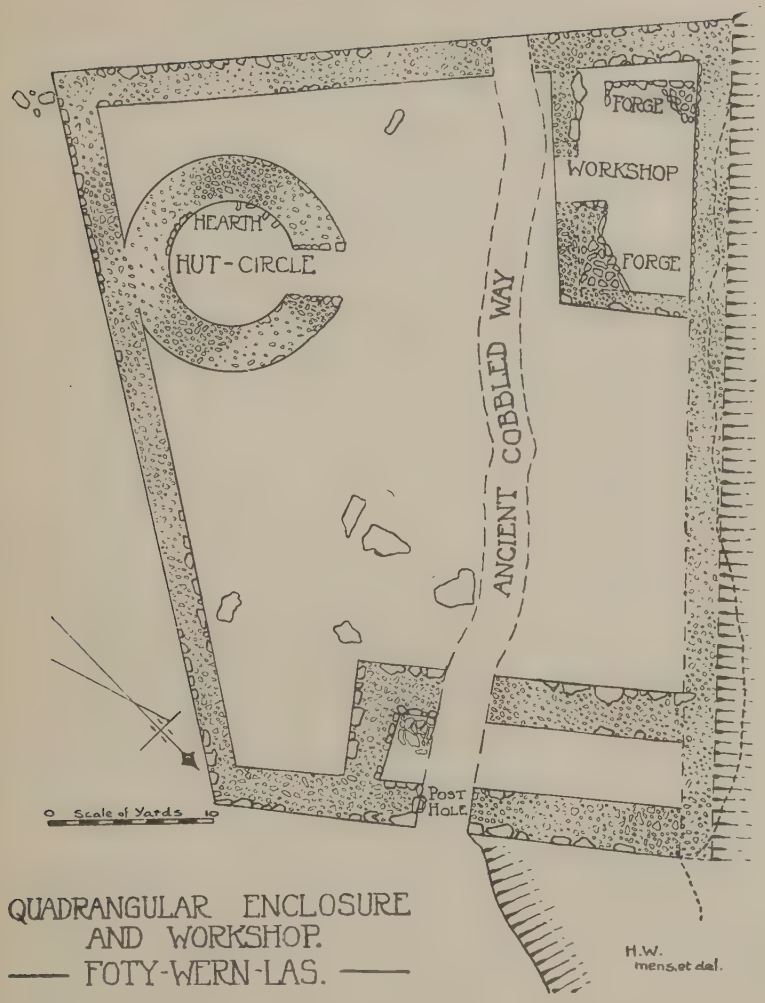


Fig. 109. Romano-British homestead at Rhostryfan, near Carnarvon.

weaving and worked iron, bronze, or lead upon a small scale. Tools of iron were, as in yet later times, supplemented by others of flint and stone. Native pottery was poor and scarce, but Roman pottery, obtained either from deserted Roman forts or through the canabae or 'civil settlements' which grew around those that retained their garrisons, was treasured and often, when broken, carefully repaired with lead or iron rivets. Weapons were apparently few, and there is no reason to suppose that the tribal life of the period was afflicted with more than its share of alarms and excursions. The sturdy ramparts which surround most of the settlements save those in the vicinity of the occupied Roman forts were merely the normal precautionary measures of an era when police protection was customarily distant or indifferent. It is an old and dying fallacy to regard the so-called 'hill-forts' or 'camps' as military works in the narrower sense. Dinorben, Braich-y-ddinas, and Tre'r Ceiri were no more 'fortresses' than were the embattled cities of the Middle Ages. As enwalled or embanked hill-towns they were the native equivalent of the fortified valley-towns—Verulamium, Wroxeter, Caerwent, and the rest—of the more intensely Romanized parts of Britain; and were indeed the natural expression of a native society, which was left largely, as it seems, to fend for itself and to seek its own social and political salvation. In similar case were the lowlanders of Scotland who lived for centuries within their fastness on Traprain Law, remotely in touch with Roman things but utterly aloof from the world of Roman ideas.

Thus it may be said in summary that, during the intermittent Roman occupation of the valleys, most of the native population of Wales contentedly 'sate on a hill apart'. Occasional contact between the two elements was of course inevitable, since one of them represented a conquering civilization whose structure was based upon slave-labour. Slaves, as Strabo tells us, were a British export before the Roman conquest; the trade was certainly not extinguished by that event, and we may imagine that the British mines,

the Romanized households of Britain and Gaul, and the auxiliary regiments of the Roman frontier armies were to some extent supplied by slave-raiders and press-gangs amongst the hills of Wales. Nevertheless, with these occasional interruptions, the equilibrium of native society in Wales was doubtless left by the Roman authorities to adjust itself. Supposed analogies between Roman Britain and British India are generally fallacious, but here it is tempting to see some parallelism between the state of affairs which subsisted in north and mid Wales during the early centuries of our era, and that which subsists to-day in the zone of 'influence' which lies to the north of our political frontier in India. In this zone our policy is one of non-interference with native affairs so long as our military outpost-forts, such as Chitral, remain unmolested. Thus, for example, two tribes such as the Swat and the Dir may be (as they are) at feud with each other whilst both may be at peace with the British authorities. These tribes have on occasion been known to interrupt a pitched battle in order to let through a small British supply-column, the passing of which was the signal for renewed combat. So may Roman detachments moving between Deva and Segontium be thought to have marched from time to time with impunity amongst the neighbourly disputes of the adjacent hillmen.

As an after-note to this section, some mention may be made of the evidence which is accumulating to show that the caves of Wales, like those of England,[1] were inhabited from time to time during the Roman period. Amongst the objects found by excavation in the famous Paviland Cave on the coast of Gower were coins of Carausius and Constantine I.[2] More significant of occupation are three clay hearths containing Romano-British pottery of the 2nd or later centuries in a cave on the Lesser Garth, five miles north of Cardiff.[3] In the same cave have been found a ring-headed

[1] e. g. *V. C. H. Derbyshire*, i. 233.
[2] Sollas, *Paviland Cave*, Huxley Memorial Lecture for 1913 (Roy. Anthrop. Inst.).
[3] *Bulletin of Celtic Studies*, i. 68.

bronze pin, another bronze pin plated with gold, and other fragments of metal which may be of this period. Similarly, a cave at Craig-y-nos, in north-west Breconshire, contained hearths, numerous animal bones, part of the skull of an infant, coarse Roman pottery of 2nd and 4th-century types, Roman bone pins, a silver ring of the 3rd or 4th century, and a worn ' Constantinopolis ' coin (A. D. 330–7).[1] Again the upper strata of the Longberry Bank cave, near Penally, Pembrokeshire, produced sherds of Roman date ; whilst the refuse which had accumulated in the mouth of Nanna's Cave on Caldy Island included a glass bead, a lignite armlet, and fragments of more than twenty pots of Romano-British ware.[2] It is clear that where suitable caves were available they were readily occupied by natives who may well have found them more comfortable as dwelling-places than the draughty huts of dry-built stone or wattle which were their only available alternative.

(*d*) *Roman Mines in Wales*

Lead (with silver and zinc), copper, iron, and gold were mined in Wales during the Roman occupation. A few small fragments of coal were found on the site of the Roman buildings at Ely near Cardiff, and others are said to have been found beneath an undisturbed Roman pavement at Caerwent and in Roman strata at Chester and near Flint ; moreover Solinus in the 3rd century mentions the use of coal at Bath.[3] But the negative evidence is sufficient to show that the value of coal was not generally appreciated in Roman times. Unlimited slave-labour obviated the necessity of looking for any less accessible material than that offered by the abundant and adjacent woodlands.

The mines or *metalla* of the Empire were owned and controlled by the state.[4] Inscriptions show that the ad-

[1] *Arch. Camb.* 1924, p. 113.
[2] *Ib.*, 1916, pp. 172 ff. ; 1917, pp. 71 ff.
[3] *Collectanea Rerum Memorabilium*, ed. Mommsen, p. 102, 8 ; cited by Haverfield in J. G. C. Anderson's ed. of Furneaux's *Agricola*, p. 182.
[4] See Haverfield, *V. C. H. Derbyshire*, i. 228 ; and in Anderson's

ministrative officer who regulated a mining area was known as the *procurator metallorum*, who has been compared with the Cornish Warden of the Stannaries or with the Goldfield's Warden of an Australian gold-mining camp. The mines were sometimes worked directly by the state; but usually the procurator farmed them out to private prospectors (*occupatores*), and claimed from them on behalf of the state a royalty which sometimes, and perhaps normally, amounted to 50 per cent. of the produce.[1] The prospectors exploited the mines either singly or in companies, and an elaborate code of laws was drawn up for the regulation of their business relationship with each other and with the state, and to ensure the continuous and efficient working of the mines. The miners themselves would be largely slaves; but even so, provision was made for 'pit-head baths', which were likewise farmed out under stringent obligations.[2] The bath-building adjoining the gold-mines at Dolaucothy in Carmarthenshire may have been one of these semi-official establishments.

Lead was mined in Mendip as early as A. D. 49, and in Yorkshire before the end of the century. In Wales, if, as seems probable,[3] the Deceangi or Decangli mentioned by Tacitus have left their name in the medieval cantref Tegeingl, a lead-bearing district of Flintshire, then four pigs of lead found in Cheshire and Staffordshire bearing the imperial name and the word DECEANGL or the like indicate that the Flintshire mines were working in the time of Vespasian and Domitian. A brass of Gordian III, said to have been

Agricola (previous note); also H. Louis, 'Some Aspects of Mining Law under the Roman Empire', *Proc. Univ. of Durham Philosophical Soc.* vi (1921), Pt. 2.

[1] This practice may account for the fact that the pigs of lead sometimes bear the name of the emperor and sometimes that of a (? private) individual. The former may represent the imperial royalty, the latter the moiety retained by the private prospector.

[2] H. Louis, *op. cit.*

[3] See Haverfield, *V. C. H. Staffs.*; and other references given by Miss M. V. Taylor in *Flints. Hist. Soc. Journ.* ix. 58 ff. For lead-mining generally in the Roman Empire, see M. Besnier, *Revue archéologique* (5th series), xii (1920), 211–44; xiii (1921), 36–76; xiv (1921), 98–121.

found in an old floor of the Talargoch lead-mine near Dyserth in the same county, shows that this cutting was already open about the middle of the third century ;[1] and ancient tools with ' the golden hilt of a Roman sword ' are said to have been discovered in the old Ffos-y-bleiddiaid mine near Abergele in Denbighshire.[2] Again, two sites near Flint have yielded abundant evidence of lead-smelting, associated with furnaces and other Roman remains,[3] and it is possible that Flint itself may have served as a small port for transhipping the ore. Farther south, near Oswestry, coins of ' Antoninus and Faustina ' are said by Pennant to have been found in an old opening on Llanymynech Hill,[4] and less substantial evidence is offered by the alleged discovery of a small bronze vessel with remains believed to be Roman at the Goginan lead-mines near Aberystwyth.[5] Finally, in the extreme south-east of the Principality, Roman coins are stated to have been found in a lead-working at Cefn Pwll-du, near Ruperra, Monmouthshire.[6] Such discoveries, vague though they be, are sufficient to indicate the probability that many ancient lead-workings in Wales may go back to the Roman period.[7]

Copper was worked in North Wales during the Roman period, but it is not possible to point to any cutting as definitely of Roman origin, save perhaps one on Great Orme's Head in which a coin of Aurelian is said to have been found. In the same neighbourhood four coin-hoards of late 3rd and early 4th-century date have been discovered, and many coins are said to have been picked up from time to time ' in association with ' the old mines on the Head,[8] but

[1] M. V. Taylor, as cited ; and *Cheshire Arch. Journ.* (new series), i. 136.

[2] J. Williams, *Records of Denbigh and its Lordship*, cited by R. Hunt, *British Mining* (1884), p. 39.

[3] M. V. Taylor, as cited.

[4] *Tours in Wales* (1810), iii. 218.

[5] *Arch. Camb.* 1906, p. 113.

[6] *Memoirs of the Geolog. Survey of England and Wales*, Pt. I, ' The Country around Newport ' (1909), p. 22.

[7] For descriptive notes of some of these workings, see *Memoirs of the Geological Survey*, xix (1921) ; and Howel Williams in J. P. Hall's *Caer Llugwy* (1923), p. 34.

[8] *Arch. Camb.* 1908, p. 117.

precise information is lacking. In northern Anglesey also the copper ores of the Parys Mountain have long been mined, and were doubtless the source of the numerous cakes of copper of Roman date which have been found in various parts of the island. These cakes are normally circular with a diameter of 11–13 in., a depth of 2–2½ in., and a weight of 30–50 lb. They have been formed by pouring the molten metal into a shallow tray, and a comparatively smooth band which is always found on the upper surface immediately within the perimeter is due to the more rapid cooling of the metal at the point of contact with the cold tray. Cakes of this type are known to have been found in Anglesey at Llanfaethle,[1] Llanfairynghornwy,[2] Llanfechell (three),[3] Llechyllched (three together, at Castellor),[4] Aberffraw (two at different times),[5] Llanbeulan,[6] Llanbedr-goch,[7] Llangwyllog,[8] 'in the Parys mines,'[9] and doubtless elsewhere. These places are all either in the northern or in the western halves of the island, and the cakes were in some cases (as at Castellor) found on the sites of Romano-British hut-settlements. It is possible that the rough ore was actually smelted and caked on some of these sites; we may recall the grinding-stones and hearths which had been used for some such purpose in the Romano-British huts at Tŷ Mawr, on Holyhead Island.

Some of these copper cakes bear stamped inscriptions. The most famous, found at Aberffraw about 1640, was seen by Edward Lhuyd; it bears the stamp SOCIO ROMAE, crossed by a second stamp NATSOL. Neither inscription has been satisfactorily interpreted. Two of the cakes from Llanfechell, near Amlwch, were stamped IVL.S, whilst one of two cakes found on the shore between Criccieth and

[1] Pennant, *Tours in Wales* (1810), iii. 59. The cake is said to have had on it 'a mark resembling an L'.
[2] *Arch. Camb.* 1871, p. 60.
[3] *Arch. Journ.* xxx. 63; *Arch. Camb.* 1876, p. 108.
[4] *Arch. Camb.* 1871, p. 51; 1919, p. 461.
[5] A. Llwyd, *Hist. of Anglesey*, p. 181; *Arch. Camb.* 1871, p. 59; *Arch. Journ.* xxx. 62.
[6] *Arch. Camb.* 1871, p. 60.
[7] *Ib.*, 1877, p. 211.
[8] *Arch. Journ.* xxx. 62.
[9] Two cakes in the British Museum.

Afonwen, on the southern coast of Carnarvonshire,[1] bore the similar stamp IVLI together with another which has been read LCVSER.[2] It may be guessed that this Julius was the lessee of a mining area in Anglesey and perhaps in Carnarvonshire, but the inscriptions throw no real light upon the subject at present. Cakes are rare on the mainland, but to Carnarvonshire may also be assigned two found on or near the southern slopes of Carnedd Llewelyn and now in the British Museum. Of these, one bears indistinct stamps, whilst the other is incised with the letters ME, possibly part of a longer inscription (? *metallum* . . .) for the cake is broken at this point. The same two letters are incised upon another fragmentary cake (unpublished) from North Wales.

Iron was mined extensively in Roman as in medieval and modern times in the Forest of Dean, just outside the borders of Wales. Farther west also, in Monmouthshire and Glamorgan, are numerous ancient workings, generally of uncertain date, and abundant evidences of iron-smelting which can in some cases be assigned to the Roman period. Thus, at Bolston Gaer near Miskin in Glamorgan, 'in the year 1752 a considerable deposit of iron cinders was discovered . . . and conveyed to some of the neighbouring iron-works to be re-smelted. . . . Beneath this bed of cinders were discovered a coin of Antoninus Pius, and some earthenware charged with greyhounds, hares, and other sporting devices'[3] —an account which bears the stamp of accuracy. Again, Roman pottery is said to have been found in old workings at Ty-isaf and at Llechau, near Llanharry, in the same county; whilst the two main streets within the Roman fort at Cardiff were thickly paved and re-paved with iron slag,[4]

[1] *Arch. Camb.* 1908, p. 229.

[2] Here again interpretation is difficult. Both the last stamps and that from Llanfechell may contain an abbreviation of the word SERVVS. The second cake found on the Carnarvonshire shore is said to bear the letters DOCNI or the like.

[3] *Arch. Camb.* 1863, p. 81; *Arch.* ii. 14; Scrivenor, *History of the Iron Trade* (1854), p. 31.

[4] This material was sometimes used by the Roman road-makers elsewhere, as in Belgium. (F. Cumont, *Comment la Belgique fut romanisée*, p. 38.)

and the courtyard of the Roman establishment two miles away at Ely was in part similarly metalled. At the last site were more direct evidences of iron-smelting, and some of the ore was hardened by the (natural or artificial) addition of manganese.[1] Iron cinder is, of course, frequently found on Roman sites and, when present only in small quantity, is of no special significance; but the occurrence of scoriae amongst the remains of an unexcavated Roman building on the summit of Portskewett Hill, near Caerwent, suggests that some of the iron-workings on the slopes of this hill may be of Roman origin.[2] It would be easy to multiply possibilities, but satisfactory evidence in particular cases is rarely forthcoming.

Gold was included by Tacitus (writing in A. D. 98) amongst the 'rewards of victory' which awaited the conqueror in Britain, and it is likely enough that the existence of gold in Wales was already known before the completion of the conquest.[3] The metal has been mined in Merioneth and in northern Carmarthenshire, but only in the latter district are there workings of undoubted antiquity. In the parish of Cynwyl Caeo, near Dolaucothy House, are remains of a Roman bath-house, numerous mines worked by the system of open casts, and a long water-channel mostly cut into the rock and formerly completed, as it seems, by wooden pipes or troughs. Near by have been found many querns or crushing-stones for breaking up the auriferous quartz, and numerous Roman objects which, where datable, are apparently of the late 1st and 2nd centuries.

The channel brought water from the Cothi, seven miles away, at a point where the river was dammed for this purpose; it is from $2\frac{1}{2}$ ft. to $4\frac{1}{2}$ ft. wide and upwards of $1\frac{1}{2}$ ft. deep, save where, in the neighbourhood of the mines, it opens into a reservoir and two oblong tanks, from one of

[1] *Journ. Rom. Studies*, xi. 79.
[2] *Antiquaries Journ.* iii. 374.
[3] See *Carm. Ant. Soc. Trans.*, Part xlv, 24. A fragment of Samian from the Dolaucothy bath-building is hardly later and possibly a decade or two earlier than A. D. 100; another is probably as late as *c.* A. D. 140.

which the water was probably supplied through a sluice to supply the dressing-floors of an adjacent open-cast. All this work is of distinctively Roman type.[1]

The principal objects found in the vicinity are an onyx seal set in cement for engraving and still in an unfinished state; and several gold ornaments including pendants, wheel-amulets of a type well known in Gaul and Britain,[2] a snake armlet and part of another with the eyes hollowed out for stones or paste and hinged to an oval box-setting containing a sard. The collection is the finest of its kind from any single Romano-British site.

No fort has been identified in or near the mining area, but a stone inscribed P CXXV (i. e. *pedes* or *passus* CXXV) records official constructional work carried out almost certainly by troops. The mines would in any case be imperial property, and it is likely enough that a small military guard was maintained in connexion with them. Subsequently the site was dominated by a Norman castle-mound, and certain well-cut though ineffective adits of a distinctive type have been assigned tentatively to inexperienced miners of this later period.

[1] See R. C. Bosanquet and Horace Sanders in Roy. Com. Anc. Mons., *Carmarthenshire Inventory*, p. 113; and Haverfield, *Carm. Ant. Soc. Trans.* ii.

[2] Another example from Wales (Flint), illustrated by Pennant, is reproduced with comments by Miss M. V. Taylor, *Flints. Hist. Soc. Journ.* ix. 73 ff.

VIII

SUMMARY

Dealing more particularly with low-lying regions in the south of England, recent writers have shown abundantly how closely the distribution of human life was there guided in early times by that of chalk and clay, of heath, forest, and fen.[1] In such regions the study of subsoil is a necessary preliminary or sequel to the study of primitive man. In Wales, where a comparatively uniform covering of boulder-clay is broken only by outcrops of rock denuded partly by glacial action and partly by more recent weathering, the problem may be translated into terms of altitude.[2] The shoreward cliffs, swept by Atlantic gales, must always have been fairly open and accessible ; but in the interior, during a considerable part of the prehistoric era, formidable barriers of forest-growth extending far above the present tree-level must have tended to isolate the higher uplands and so to restrict the penetration and diffusion of sparse, ill-equipped, and poorly organized populations.

At the same time, we are not entitled to clothe prehistoric Wales indiscriminately at all periods with a dense mantle of obstructive woodland. It was probably as much by nature—by climatic changes which induced the formation of peat—as by the increasing efficiency of man that the interior of the country gradually became more habitable during the Bronze Age (see below). Moreover, we cannot at present say to what extent, if any, the earlier forests of Wales were contemporary with its first human era. It is now widely established that the Continental Aurignacian was coincident with the waning phases of the great (Würm) glacial epoch,

[1] Cf. O. G. S. Crawford, *Geographical Journal*, xl. 184 ff., and *Man and his Past* (1921) ; Cyril Fox, *The Archaeology of the Cambridge Region* (1923).

[2] See generally H. J. Fleure, *Arch. Camb.* 1913, pp. 153 ff,

and the preponderatingly Aurignacian facies of the Welsh cave-industries compels us to assign them, in origin, approximately to the same period and to a climate which may have been increasingly warm and dry, but still with comparatively little inducement to forest-growth. At the same time, the duration of the Welsh Aurignacian cannot easily be guessed. The implements, though of poor quality and often difficult to classify, range from simple flakes of sub-Mousterian form to a few comparatively elaborate leaf-points of late Aurignacian (Font Robert) type. But there, in Wales, the Continental type-sequence ends. No implement of purely Solutrian type has yet been recognized, and no specific Magdalenian culture, unless we assign to this phase some of the elementary lamellae which may equally well be Aurignacian. It is a possible inference that the land-submergence which preceded the end of the Continental palaeolithic gradually cut off the meagre population of Wales from the outside world, and the isolation may have been completed by the upgrowth of the earlier forest-barriers. Under such circumstances, cultural and perhaps physical decadence may well have set in amongst the Welsh cave-people, and they may have dwindled eventually almost to extinction.

If we inquire into the local distribution of these palaeolithic people, we are confronted with the difficulty of identifying their handiwork with any certainty save when it is found in association with the palaeolithic fauna. We thus, perhaps wrongly, regard them as essentially cave-dwellers. Mr. Leach and Mr. Cantrill have both found implements of Aurignacian type on the cliffs of Pembrokeshire, and, at least during the summer months, the cave-family doubtless moved out into the open. But proof cannot be expected. Nor, therefore, can we say for certain that the palaeolithic people lived only in the coastal regions along the exposures of carboniferous limestone in which most of the caves are found. None of the few caves, however, in the interior of the Principality has yielded a pleistocene fauna or implements of palaeolithic type.

After the period of land-submergence and the formation

of the English Channel towards the end of the palaeolithic, followed a renewed elevation of the surface which turned the Strait of Dover once more into a land-bridge, cleft, if at all, only by a small stream.[1] Easy communication between the Continent and Britain was thus again opened up, and, if we interpret our evidence aright, across the new land-bridge at the dawn of the neolithic epoch (perhaps 10,000 years ago) small groups of migrating hunters and fishermen found their way into this country. Their civilization seems to have been of a low order. Their flint implements were for the most part small flakes sometimes of the angular form especially associated with the 'Tardenoisian' industries of Belgium, France, Spain, Italy, and northern Africa (Capsian); often, merely small blades or gravers slightly retouched on one side. Industries of this type are found especially in our coastal counties—Northumberland, Lincolnshire, Kent, Sussex, Cornwall—but they also occur inland, as at Enstone in Oxfordshire, in East Lancashire, and in south-west Yorkshire on the Pennine Chain.[2] In Wales, we have noted partial analogies at Aberystwyth, at several points in Pembrokeshire, in Gower, and perhaps farther east along the Glamorgan coast. In addition to these 'flake-factories', the Pembrokeshire cliffs have yielded numbers of the abraded pebbles known as 'limpet-scoops', such as are found in Azilian (very early neolithic) deposits in France and on a few sites in northern Britain. The evidence of apparently early neolithic cultures in Wales, therefore, is suggestive, but the poor quality of the implements in question deprives it of complete certainty.[3] Once more, as in the palaeolithic era, Wales seems to have been the final refuge for the inferior elements in the western European civilizations of the period.

[1] Clement Reid, *Submerged Forests*, p. 68.

[2] F. Buckley, *A Microlithic Industry of the Pennine Chain* (1924); J. A. Petch, *Early Man in the District of Huddersfield* (1924), pp. 12 ff.; also *Antiquaries Journ.* ii. 376; *Brit. Mus. Stone Age Guide* (1911), p. 125; *Prehistoric Soc. of East Anglia Proc.* i. 334, 438; ii. 58; iii. 63.

[3] No barbed harpoon-heads of horn or bone have yet been found in Wales.

Poor though their industrial culture was, however, these early cliff-dwellers in Wales may be said to represent in social evolution a distinct advance over the palaeolithic cave-man. The clustered chipping-floors of Pembrokeshire, if correctly associated with them, suggest that they were grouped together in communities which, in size, would probably have put to shame the small local units of the earlier period. At Marsden in the Pennine Chain, Mr. Buckley found the pygmy implements concentrated in patches and covered with morsels of burnt birch—possibly the sites of huts. Such small villages, though not identified in Wales, would be the natural corollary of the numerous Pembrokeshire chipping-floors.

By this time in southern Britain and along the opposite shores of the Continent the coastal flats, at the present day submerged in places to a depth of 50 ft. or more beneath the sea, bore a thick forest of birch and hazel, amongst which flint flakes and the horns and bones of red deer are sometimes found. How far this forest covered the interior of Wales we cannot guess. At a (presumably) later period small trees were growing above the 2,000-foot contour in Breconshire (above, p. 57), and it is likely enough that the apparent restriction of this early population to the neighbourhood of the coast, though partly due to the convenient proximity of beach-flint, was also partly governed by the forest-barriers of the hinterland. In restoring to modern Wales her ancient forests we must bear in mind the probability that many upland districts which are now too barren of soil to support trees may only have become thus denuded when, from climatic or other causes, a former protective forest-growth was removed. In detail, therefore, our picture of Wales under forest must remain incomplete, and we can only say provisionally that in early neolithic times a number of separate influences, which doubtless included the superior accessibility of the seaward cliffs and the availability of flint and of good fishing and hunting along the wooded shores, combined to concentrate the meagre population of Wales upon the ridges immediately behind the former coast-line.

To the phase of re-emergence at the beginning of the neolithic period succeeded a long though perhaps intermittent downward tendency of the land-surface in Wales, southern England, and the neighbouring Continental coasts. This general tendency continued into early historic times, as is shown by the submergence (not erosion) of the so-called Red-hills of Essex, and of Romano-British huts between the tide-marks of the Thames at Tilbury.[1] In Wales the more or less substantial traditions of the submergence of medieval and earlier villages off the coasts of Carmarthenshire, Cardiganshire, and Carnarvonshire may indicate a continuation of the same process down to more recent times. It is not always possible to determine how far these instances of submergence are due to actual subsidence and how far they should be attributed to quite different causes, especially erosion ; but it is sufficient for the present purpose to note that during and to a less extent after neolithic times the forest-fringe of Wales was gradually overwhelmed by the sea. Its disappearance was by no means uniform. Sections at Llanaber, Cardiganshire, showed two main layers of forest and peat separated by a period of renewed flood during which the trees had been killed and replaced by reeds.[2] On the south shores of Pembrokeshire also at least two distinct layers of forest, both associated with flint flakes, have been recorded.[3] At Barry, during the cutting of the dock, four distinct levels of peat containing trees were identified, but the only artefacts recorded are a re-used fragment of a polished flint axe and possibly two bone needles, all found with logs of oak, willow, and fir in the topmost bed of peat.[4] Similarly, at the base of the superficial forest-bed off Rhyl in North Wales a polished stone axe has come to light.[5] So far as it goes, the evidence suggests that the upper or uppermost

[1] Roy. Com. Hist. Mons., *South-east Essex*, p. 38.
[2] T. G. B. Osborn, *Manchester Memoirs*, lvi (1912), No. 16. (The reflooding does not necessarily imply any marked acceleration of the land-subsidence.)
[3] T. C. Cantrill, *Arch. Camb.* 1915, p. 195.
[4] Summary by C. Reid, *Submerged Forests*, pp. 52 ff.
[5] *Arch. Camb.* 1923, p. 151.

submerged forest was partially contemporary with the later neolithic.

As to the people who traversed these forests and lived on their outskirts, we have little direct trace. During the construction of the Alexandra Dock Extension at Newport, Monmouthshire, in 1911, a human cranium, stained black and slightly mineralized, was found 13 ft. deep in a bed of gravel which was itself covered by 29½ ft. of mud and clay. The gravel also contained bones of sheep, red deer, boar, aurochs, *Bos longifrons*, and wolf. The human skull is of the so-called ' River-bed ' type, long in proportion to its width (cephalic index 72·3), rather small but well shaped, with pronounced supra-orbital ridges.[1] Above the bones are said to have been found the roots of trees, but this important detail of the discovery is ill recorded. Again at Port Talbot in Glamorgan, under similar circumstances, was found the frontal part of a skull alongside the sacrum of an Irish Elk in a layer of peat beneath 13 feet of sand and clay; whilst near by was dredged up part of a second skull.[2] These fragmentary skulls add little to our knowledge, but with the Newport skull may be supposed to represent the earlier neolithic inhabitants of Wales (the Irish Elk seems to have become extinct in Britain before the end of the Stone Age), and to represent the ancestors of the people who later buried their dead in the dolmen-tombs. Indeed, their descendants to-day still form the most characteristic element in the population of Wales.

The main currents of the later neolithic population still flowed coastwise. At various periods in or about the third millennium B. C. waves of immigrants, following the natural highways of the seaward cliffs and of the sea itself, introduced the custom of building great stone tombs and other megalithic monuments (map, Fig. 110). These tombs, differ

[1] A. Keith in *Human and Other Remains found in . . . Newport, Mon.* (Newport Museum, 1911).

[2] *Ib.*, p. 20. Also T. Wilson Parry, *Journ. Brit. Arch. Assoc.* xxii. 42. The latter skull was thought to have been trephined, but subsequent examination has shown that such was not the case.—T. W. Parry, *Proc. Roy. Soc. Medicine*, xiv, No. 10.

widely amongst themselves both in type and, probably, in date. In the deficiency of direct evidence, we can at present merely attempt to classify them typologically ; and if we find that no distinctive type-sequence emerges amongst the Welsh groups, we must be content to recognize that the megalithic traditions matured outside Britain and only occasionally, as in some of the Scottish megalithic cairns, seem to have developed specialized forms in these islands. The wide divergence of types such as we see between the Tinkinswood (St. Nicholas) long-cairn, near Cardiff, the passage-grave of Parc-le-Breos in Gower, and the Plas Newydd chambered mound in Anglesey, can scarcely be explained save by the postulation of successive inroads or infiltrations from England, the Continent, and perhaps Ireland. Only occasionally, as in the false entrance of the Capel Garmon tomb in Denbighshire, can we identify elements of a systematic devolution of type.

If the early neolithic shore-dwellers represent socially an advance beyond the cave-unit of earlier times, the work of the megalithic builders, with all the co-ordination that the construction of their great stone monuments implies, marks not merely a further advance, but in some respects the highest achievement of the prehistoric civilizations of Wales. There is no more striking fact in the whole of British prehistory than the proved transportation of the famous ' blue stones ' of Stonehenge from the mountains of Pembrokeshire to the plains of Wiltshire. The religious and political centralization implied by this mysterious act, in an era of forest and fen unmapped and often untracked, can scarcely have been surpassed in any later prehistoric age.

The megalith-builders for the most part avoided the heights in favour of slopes or knolls which must often have been within the neolithic forest-zone. It is probable that by the end of the third millennium a gradual change of climate was denuding the upper slopes and beginning to induce the peat-bogs which formed rapidly during the succeeding Bronze Age.[1] Certain it is that at the beginning

[1] C. E. P. Brooks, *The Evolution of Climate*, pp. 138, 140 ; and W. H. Pearsall in *Nature*, 6 Dec. 1924, p. 829.

of the Bronze Age (soon after 2000 B. C.) the interior of the peninsula was for the first time becoming generally accessible. Away from the coastal counties, neolithic relics are rare in Wales; and it was perhaps not until the extreme end of the period that an axe, probably of Sussex flint, and an adze, certainly of Wiltshire chert, found their way to southern Breconshire. The adze, it may be recalled, was discovered more than 2,000 ft. above sea-level in a channel cut in a bog which had formed over small oak and birch trees. A handled-beaker and two large flint knives are additional evidence of contact between Breconshire and East Anglia at this period or but little later.

Hitherto the main avenue of approach has been coastwise from the east and south. With the beginning of the Bronze Age, however, Wales at last begins to fulfil the role destined for her by her geographical position. She becomes a frontier land—a frontier facing alternatively eastwards or westwards. Thenceforth throughout prehistoric and early historic times Wales is therefore the meeting-place of East and West, and it is this fact, rather than the emergence of any distinctive indigenous culture, that during those periods gives Wales its special interest to the archaeologist and the historian.

The new situation arose from various causes. First, a partial deforestation and the formation of the Bronze-Age peat-bogs referred to above probably opened up the marches and the interior of the country, and so encouraged circulation from the east. Secondly, to the west, Ireland partly by reason of the intensive exploitation of Wicklow gold was now becoming an active commercial centre. Thirdly, and more generally, the introduction and development of metal-working eventually facilitated the opening-up of woodland and, above all, offered an obvious motive and a convenient medium for trade. It is possible that the copper and even the gold ores of Wales should be added as a subsidiary factor, although it is quite uncertain whether these minerals were worked appreciably in Wales in prehistoric times; if so,

certainly not in the Early Bronze Age, which has left scanty traces there (Maps, Figs. 111–12).

It follows from these considerations that the problems of the Welsh Bronze Age are primarily and largely those of the geographical distribution of imperfectly assimilated foreign cultures. The material evidence available is not large, though previous writers have tended to underrate its quantity; it must, moreover, be remembered that the comparatively low hills of southern England have often been ploughed in modern times and so have produced 'finds' such as the less cultivated uplands of Wales may still retain. The proportion at least of Late Bronze-Age implements to modern plough-land in Wales probably approximates to the corresponding ratio in England.

Let us consider, then, the Welsh Bronze Age as a geographical problem with two main aspects. First, the influence of Ireland. We may recall that some thirty years ago Kuno Meyer propounded his well-known thesis that the Goidelic or Gaelic elements recognized in early Welsh inscriptions and even in modern Welsh are not to be derived from an original Goidelic population of Britain (as Sir John Rhŷs maintained), but from Irish invaders of the historic era. 'As to the Gaelic loan words in Welsh', he wrote, '. . . none of these can have been borrowed before the second century of our era, *the time of the first Gaelic invasion* (of Wales).'[1] Whatever truth may underlie Kuno Meyer's general theory, this particular argument, based on purely documentary evidence, is no longer valid. Indeed, the tendency of modern archaeologists is perhaps rather to exaggerate the reactions of Ireland upon the neighbouring lands during the *prehistoric* era. To some writers, Ireland has almost become the commercial and to a less extent the cultural focus of northern and western Europe during the earlier Bronze Age or even the later neolithic. The student may well emerge from the recent literature of the subject with a vision of prospectors rushing towards Ireland along our coasts, building megalithic monuments as they go: of Beaker-folk following hard

[1] *Cymmrodorion Soc. Trans.* 1895–6, p. 71.

upon their footsteps (but, singularly enough, not quite getting there); of Scandinavian magi bringing amber, Yorkshiremen jet, and of adventurous Irishmen in return peddling their gold wares in Scotland, Wales, Cornwall, Brittany, and strewing their bronze implements upon our shores. These and similarly uncritical medleys of fair inference and unjustified guesswork are rapidly creeping into the text-books under the common guise of fact, and it behoves us to examine the evidence briefly afresh.

The only definite evidence for special commercial activity in and from Ireland as early as Phase I of the Bronze Age is the distribution of the gold lunulae (above, p. 170). The date of the lunulae rests at present on the probable association of two of them with a flat-axe in Cornwall; no other significant association is recorded. Such as it is, this evidence must provisionally be accepted, with the hope that further associations may in future confirm it. But there is little doubt that the bulk of the Irish gold trade was of considerably later date—the end of Phase II, and Phase III—for the torcs, bracelets, and 'ear-rings' are associated with palstaves, socketed tools, and leaf-shaped swords. Perhaps 1100 B. C. may be taken as a central date for the maximum of the Irish gold-trade—a date, it will be noted, long after the Megalithic and Beaker periods. If any prehistoric civilization may be thought to have been lured into these islands by the glamour of Irish gold, we must surely give precedence to the peoples who brought in the leaf-shaped swords and the socketed axes; but no emphasis is here laid upon this possibility.

When we turn from gold to bronze, the influence of Ireland becomes more elusive. So far as we know, the flat-axe was already in a comparatively developed form when the type first reached Wales. It occurs chiefly in the coastal counties but, like the contemporary Beaker civilization, it is also found in the interior, and there is no reason to ascribe its introduction to Irish rather than to English influence. On the other hand the halberd (above, p. 142), though found in England, is a notably popular Irish type, and the

three Welsh examples—at Nevern in Pembrokeshire, Pontrhydygroes in Cardiganshire, and possibly Wrexham in Denbighshire—are all from districts eminently accessible from Ireland. The halberds belong to the latter part of Phase I ; and perhaps to the same general period should be assigned the hoard of flint arrowheads of Irish type from Llyn Bugeilyn in north-eastern Cardiganshire. Other bronze implements with analogies from Ireland rather than from England date from Phase III. The most striking are the so-called ' trunnioned chisels ', which belong to the Late Bronze and Hallstatt Periods on the Continent. These occur in Wales at Talerddig in western Montgomeryshire and in or near Denbighshire, whilst a third was found just over the border at Broxton, south of Chester. Examples are known from Berkshire, Cambridgeshire, and Surrey, but are rare in England, whereas several are known from Ireland, and are there possibly derived from a more or less direct intercourse with the Spanish peninsula.[1] It is a reasonable inference therefore that the Welsh specimens, all within easy access of the sea, came in from the west rather than from the east. Lastly, a few socketed axes from Wales—notably the short, squat type with advanced loop and sometimes with cable-moulding, as at Beaumaris and Guilsfield (above, p. 158)—strongly suggest Irish rather than English analogies.

These scattered objects of metal may be regarded as evidence of trade but scarcely, in themselves, indicate any appreciable immigration into Wales from the direction of Ireland. Other evidence, however, is more suggestive. Ill-baked, friable Bronze-Age pottery was not, we may be sure, carried far from its place of manufacture, and four or five distinctively Irish ceramic types in south-western Wales may safely be regarded as the handiwork of Irish settlers. The pottery in question is without analogy in central or southern Britain, but is well known in Ireland. To the Tenby food-vessel, already noted by Lord Abercromby as certainly Irish, and the ' encrusted ' cinerary urn

[1] See W. J. Hemp, *Antiquaries Journ.* v. 51.

from the Prescellys similarly ascribed by Thurnam, we have been able to add two food-vessels from Templeton near Tenby, and an encrusted urn, from Pendine in south-western Carmarthenshire (above, pp. 184, 195). The identity of the last vessel with another found long ago in Ireland is a striking and convincing demonstration of the true origin of this un-English type. It is clear beyond dispute that during Phases II and III of the Bronze Age, Irishmen, or at any rate Irish women (for they it was who seem to have been the potters of the ancients), were amongst the inhabitants of Pembrokeshire and Carmarthenshire.

So much for influence, by trade and by settlement, from Ireland. At the same time, since the beginning of the Bronze Age other elements had been finding their way into Wales from England. The Beaker-folk had made their way along the northern and southern coasts and had reached the interior by way of the great river-valleys of the Severn, Usk, and Taff. By this period, although they still worked flint, these folk had learnt also to use metal, and they may have done much to establish the knowledge of bronze-working in Wales. As in the rest of Britain their intrusion during the early centuries of the second millennium seems to have been followed by a long period of comparative quiescence, corresponding with Phase II, during which for the most part the orderly development of native arts and crafts was only partially affected by trade and minor immigration.

With Phase III opens another long epoch of immigration, from the east and south, with revolutionary results the full significance of which must remain the subject of conjecture. In central Europe the winged axe, which is rare in England and absent from Wales save at Guilsfield in Montgomeryshire, was improved into the socketed forms that are distinctive of the latest Bronze Age. The socketed axe appeared in this country at first probably through the instrumentality of trade ; but about the same time a new and powerful weapon, the leaf-shaped cutting sword, a type also evolved in central or east-central Europe, was brought over in large quantities which suggest actual

immigration rather than trade. It is possibly no mere coincidence that at this period the old lake-settlements of Switzerland came to an end, and the presence in southern Britain of implements and pottery—notably bronze razors, tanged sickles, winged axes and socketed axes with 'vestigial' wings—which are specially characteristic of those settlements—suggests a forcible dispersal of some of their inhabitants towards the north-west. It is at least abundantly clear that the populations of central Europe were in a state of disruption to which we must ascribe in no small degree the intrusion of implements and pottery of types which had certainly been evolved outside these islands. In Wales the new pottery seems to have left no definite trace; but leaf-shaped swords in at least eight of the thirteen counties, and razors in Anglesey, Glamorgan, and Monmouthshire, were cast up by these late Continental cultures as they drifted westwards over the Welsh hills.

Here a word must be added on the much discussed topic of Bronze-Age trade-routes. As in early historic times it was naturally the three westerly promontories—Anglesey, Carnarvonshire (Lleyn), and Pembrokeshire—that tended to attract the merchantmen of the Irish sea. Hence we find a wealth of gold in or near the northern promontories and traces of Irish settlement in the southern. In regard to the latter Dr. Fleure has made the interesting suggestion that the early ecclesiastical dominance of St. David's may have been based upon an ancient prestige of the site as a focus for the many sheltered harbours of the adjacent coast-line; much as Canterbury is the focus of the ways from the little group of old ports (Cinque Ports) which were alternatives for ships coming from France, or as Winchester was the point of convergence from the ports on the Solent.[1] The suggestion is tempting, though at present Bronze-Age relics from western Pembrokeshire are few. In any case the promontories would primarily have been ports of call rather than of distribution, the southern *en route* for Cornwall and the

[1] *Arch. Camb.* 1915, p. 409.

Continent, the more northerly perhaps *en route* for Derbyshire, Yorkshire, and the Baltic.[1] This northerly trade-route finds some support in the presence of Yorkshire jet on four sites in Anglesey, and in the fact that, of the five ' finds ' of prehistoric amber beads in Wales, three are from Anglesey and a fourth from Mold, along the approximate line of the same route. Whether the amber was brought from the Baltic or from the east coast of England does not affect the immediate problem. It was doubtless a counterpart of the Irish gold which may be supposed to have been the dominating factor in this trade with the west. Three at least of the amber finds from Wales are of Late Bronze-Age date, and therefore synchronize with the latter phases of the Irish gold-industry ; the date of the other two finds is not known. The jet from Anglesey is in two cases of the same late period, but in the other two cases it must be assigned to the Beaker-period (Phase I).

If we turn to the interior of the Principality our evidence for Bronze-Age lines of communication is of the scantiest. Several routes have been conjectured,[2] but in no case is the evidence at present adequate to raise these conjectures from the level of provisional working-theory. As the map indicates (Fig. 112), the principal lines of movement and settlement were : (i) along the low hills bordering the coasts ; (ii) inland from these regions up (the flanks of) the river valleys, such as those of the Clwyd and of the east Glamorgan system ; (iii) into the interior of Wales from England via (the flanks of) the great valleys of the Dee and the Severn, with their tributaries. These distributions were obviously determined by the exigencies of a mountainous and difficult country, and do not necessarily mark the chosen track of caravans of merchandise wending to or from the ' El Dorado of the West '. In a few cases, notably in the great transverse channel known to geographers as the Bala Cleft, travellers may occasionally have found their

[1] For the position of Derbyshire in this supposed trade-route, see O. G. S. Crawford, *Geographical Journ.* xl. 196.

[2] For a summary of these conjectures, see H. J. E. Peake, ' The Bronze Age in Wales ', *Aberystwyth Studies*, iv. 13 ff.

way to or from the western coasts. But the dozen flat-axes which have been thought to mark a trade-route from Southampton Water to Harlech are not sufficient to support conjecture, and even more tenuous guesses have been asserted with an assurance that belies their lack of substance. Our fathers saw in every bronze sword and palstave the relics of some great warrior-chieftain ; a more scientific generation is inclined to see in them the relics of some prehistoric commercial traveller. This is a useful reaction ; but when a well-known writer conjectures that a trade-route, starting near Evesham, ' crossed the Severn at Worcester, where a leaf-shaped sword has been found in the river, passing by the north of the Malvern Hills, where two palstaves were dropped ', we may be glad to accept his next statement that ' its further course westward has not been traced '. At the same time, premature though these results may be, they indicate a line of research which will become increasingly profitable as Mr. Harold Peake's great catalogue of bronze implements, now being prepared for the British Association, approaches completion.

The Early Iron Age in Wales is a paradox. The iron sickle and spearhead from Llynfawr in Glamorgan and the iron socketed axe from the Berwyn Hills near Corwen are possibly the earliest iron implements yet found in Britain ; at the same time they are the only iron implements which, in Wales, we can with certainty ascribe to the prehistoric era. The sickle, found with a crescentic razor and winged sword-chapes, is almost certainly an intrusion from the Continent, brought over possibly by some of those refugee-invaders who are thought to have found their way across north-western Europe after the disruption of the Swiss lake-settlements. In any case these early iron implements have no real place in Welsh prehistory ; or, rather, they are a further exemplification of the mixed and accidental character of the prehistoric cultures of this Ultima Thule.

At the end of the prehistoric era and during the first half of the Roman period a few objects of Early Iron-Age or Late Celtic art filtered into Wales. With the exception of a stone

quern from Anglesey they are all of metal. Some of them are of surpassing beauty ; but they tell us nothing about the movements of peoples, and strikingly fail to support the theory that the Ordovices were an early Brythonic wedge thrust into mid-Wales (above, p. 205). Only in the south, at Ogmore in Glamorgan, have we actual traces of occupation by a Late Celtic people. Here were found the burials of men equipped with iron weapons and gorgeously decorated helmets which seem to have been of the 1st century A. D. We may guess that these warriors were amongst the refugees who, at the time of the Roman invasion under Claudius, are recorded to have fled from the rich Celtic lands of south-eastern England to make a last stand amongst the hillmen of Wales. But of a settled native culture in Wales during the later pre-Roman centuries we have no vestige. Not a potsherd, scarcely a single implement exists at present to fill the blank. One of the urgent needs of Welsh archaeology is the excavation of the camps or 'hill-forts' which, particularly in south-eastern Wales, may be expected to yield some trace of that Late Celtic civilization which flourished abundantly on the opposite shores of the Severn.

The Roman occupation (map, Fig. 113) marks in some sense the consummation of prehistoric Wales. The natural position of Wales as a frontier-land now found formal recognition in the development of the peninsula as a self-contained unit in the imperial frontier-system. From the point of view of the conqueror Wales became an armed camp, save for a limited area in the south-east where, behind the base-fortress of the 2nd Legion, a small fenced town, Venta Silurum, was planted to disseminate 'Kultur' amongst the restless Silures. But it is clear that this seed took no deep root. Even in the intensively Romanized region of southern England, a considerable part of the population—peasantry, small-farmers, potters—was content to live in rough round huts and primitive villages of traditional native type.[1] In Wales

[1] e. g. at Tilbury—Roy. Com. Hist. Mons., *South-east Essex*, p. 38 ; at Long Wittenham—*V. C. H. Berks.* i. 219; at Woodcuts, &c., Dorset—Pitt Rivers, *Excavations in Cranborne Chase.*

practically the whole of the native tribesmen thus retained and developed their own social traditions. How far the hill-top 'camps' in the neighbourhood of Caerwent remained in occupation during the Roman period we cannot, in the absence of excavation, say. Particularly is it desirable to explore the fine camp in Llanmelin Wood overlooking Caerwent; a site which has an obvious claim to be regarded as a possible pre-Roman Venta or market-town which the Roman foundation in the valley beneath may well have been intended to supplant. Elsewhere in Wales, especially in the north, excavation has revealed the rude hut-settlements, sometimes open but often walled or embanked, in which the native life of the country sought its own salvation; it is clear that after the period of active conquest the Roman policy in regard to these hillmen was largely one of *laisser-faire*.

The episode closes with a grim renewal of that struggle between East and West which was probably not in reality so new a thing as has been thought. Written record hints at immigration from Ireland as early as the 2nd century of our era; archaeology, as we have seen, shows evidence of Irish settlement in Wales as early as the Middle Bronze Age. The invading Irish of the 4th century A. D. may thus have been welcomed by friends and relatives upon the coasts of Anglesey, Lleyn, and Pembrokeshire; and their wide influence in north-west and south-west Wales during the 5th and following centuries, whether by violent or by peaceful penetration, is shown by the well-known Ogham and sub-Roman (but largely Irish) tombstones to have been extensive. The more violent of these invasions were ultimately stemmed by the Cymry; but the way for the victories of Maelgwn was doubtless prepared in the last years of the Roman occupation alike by the few surviving Roman garrisons amongst the coastward valleys and by the native populace in its fortified hill-towns. Not that these hillmen were necessarily fired by any particular flame of imperial patriotism—though the magic of the Roman name had a curious power of insinuation; but in fighting, as they

must have done, for the safety of their herds and their huts they were incidentally fighting for the safety of Rome. In this sense the interests of native Wales were at one with those of the Empire, and our social or political 'progress'—from the isolated cave-community to an entity in a great imperial system—may be brought to a convenient term.

It is otherwise fitting that the first long phase in the story of Wales should be brought down to the struggles of the early historical or semi-historical period. The complex of men and manners and motives which there dimly emerges differs doubtless only in degree from those which are implicit in much of our prehistoric evidence. If we would more fully visualize the movements of peoples and cultures in prehistoric times we may profitably turn now and then from our catalogues and maps to the pages of Ammianus Marcellinus or the Welsh and Irish saga-literature, where analogous movements take for a moment the shapes of living men. The 'human element' may not be too long neglected without a loss of balance. In the name of science it is maintained that the fate of empires is determined by a few degrees of Fahrenheit, that the decline of the ancient Hellenic civilization was due to the inroads of the malarial mosquito, and that King Arthur was possibly a sun-myth. All these suppositions may be true. But the clay is sometimes a little heavy about our boots.

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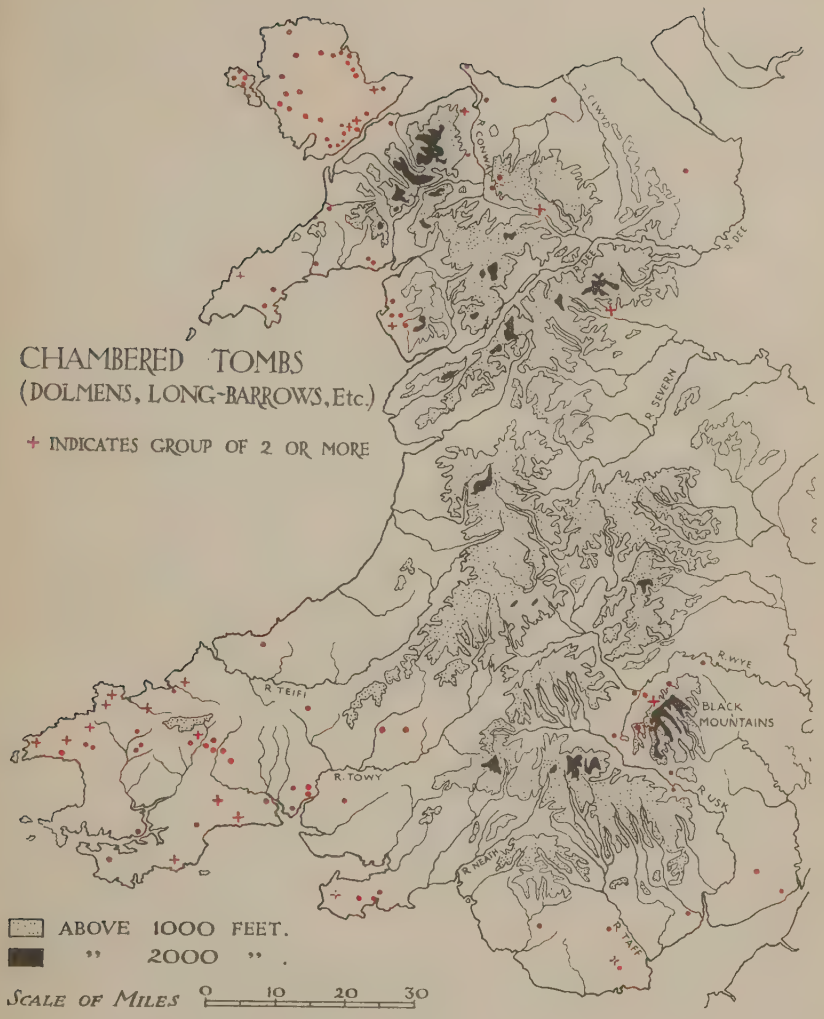
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FIG. 110

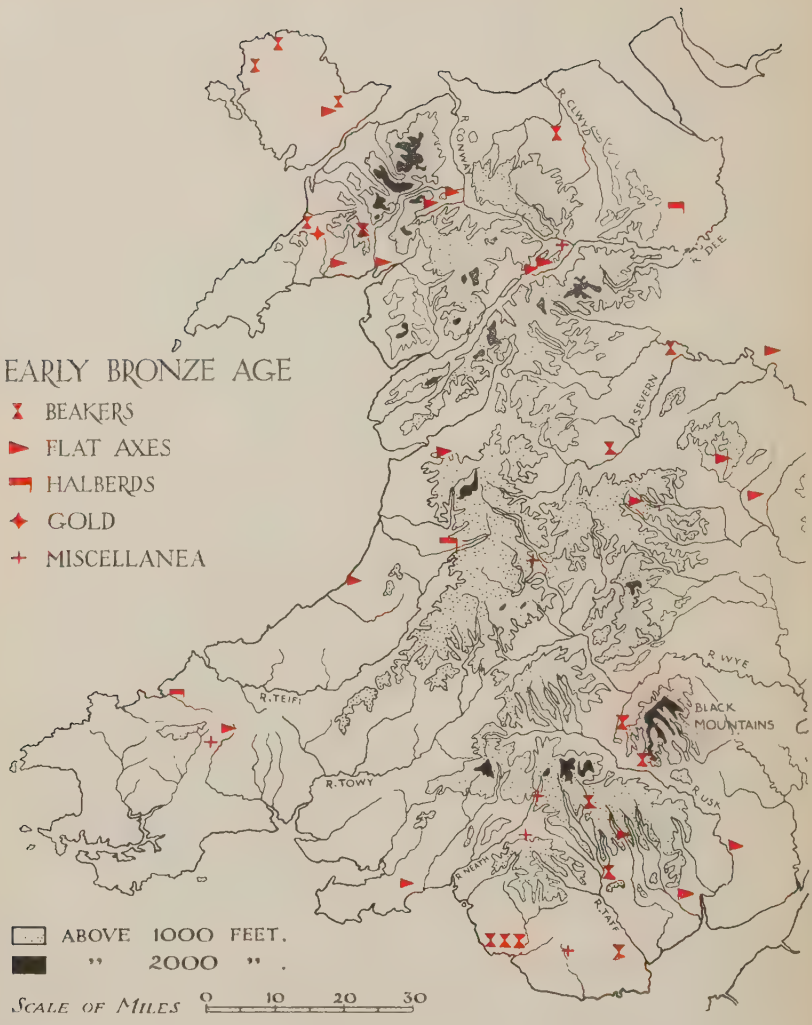


FIG. III

(*Addenda*. Beakers from Bwlch-y-Gwryd in Carnarvonshire and Cyffig, near Whitland, in Carmarthenshire.)

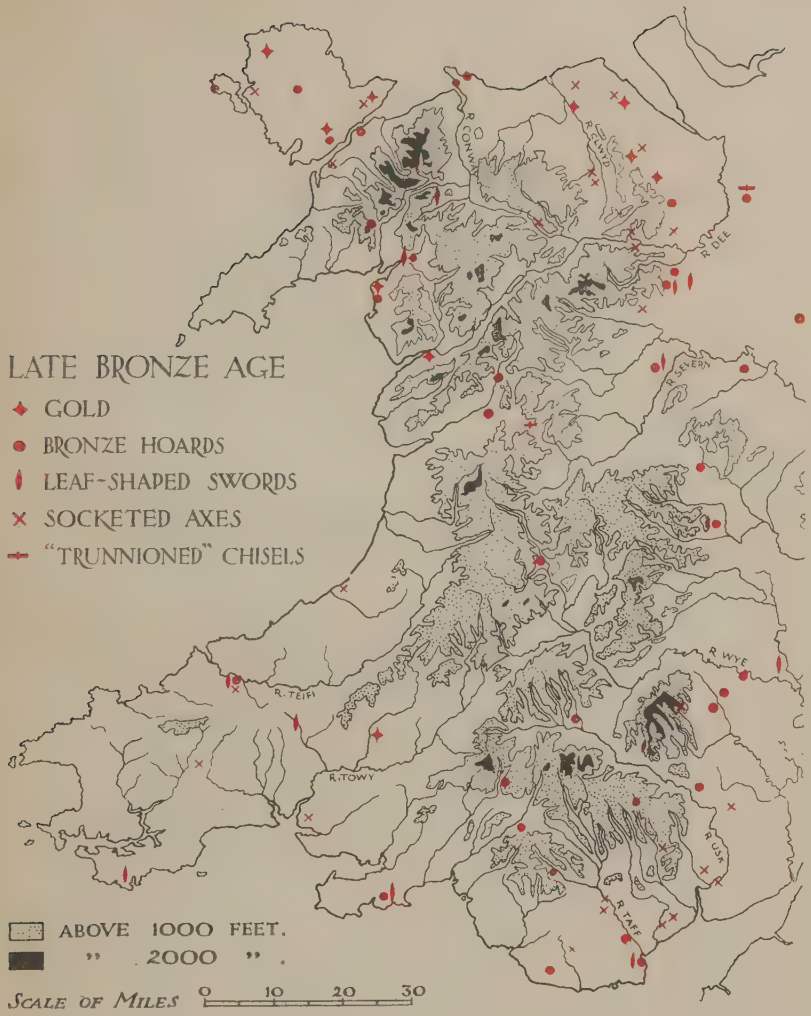
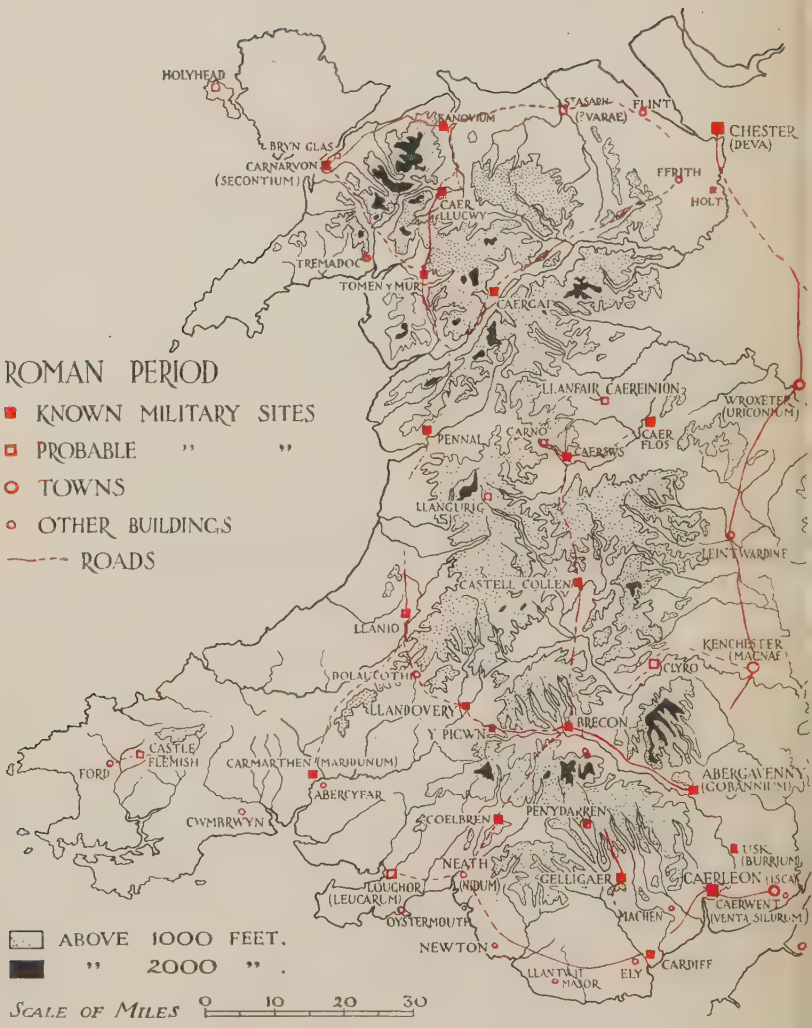


FIG. 112

(*Addenda.* Socketed axes from Penmaenmawr in Carnarvonshire and near Aberdare in Glamorgan.)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ABERGWYFAR
CWMBRWYN
COELBREN
PENYDARREN
USK (BURRIUM)
NEATH
LOUGHOR (LEUCARUM)
LINDUM
GELLIGAER
CAERLEON (ISCA)
CAERWENT (VENTA SILURUM)
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FIG. 113

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